RECORD OF DECISION

Johnson and Towers, Inc. Site

Soil and Groundwater

Mount Laurel Township, Burlington County, New Jersey

United States Environmental Protection Agency

Region II

September 2008

DECLARATION STATEMENT

RECORD OF DECISION

SITE NAME AND LOCATION

Johnson & Towers Inc. Site (EPA ID# NJD123456789)
Mount Laurel Township, Burlington County, New Jersey

STATEMENT OF BASIS AND PURPOSE

This decision document presents the Selected Remedy to address soil and groundwater at the Johnson & Towers, Inc. Site, in Mount Laurel Township, Burlington County, New Jersey. The Selected remedy was chosen in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), as amended, and to the extent practicable, the National Oil and Hazardous Substances Pollution Contingency Plan (NCP). The decision is based on the Administrative Record file for the site.

The State of New Jersey concurs with EPA's decision in selecting the no further action remedy for soils and long-term monitoring for groundwater. A copy of the related concurrence letter can be found in Appendix IV. The information supporting this remedy is contained in the Administrative Record for this site, the index of which can be found in Appendix III.

DESCRIPTION OF THE SELECTED REMEDY

The lead agency has determined that no action is required to address soils at the site. The remedy for the groundwater consists of a long-term groundwater sampling and analysis program to monitor the contaminant concentrations in the groundwater at the site and to assess the migration and attenuation of these contaminants in the groundwater over time.

DECLARATION OF STATUTORY DETERMINATIONS

Part 1: Statutory Requirements

No remedial action is necessary to be protective of human health and the environment.

Part 2: Statutory Preference for Treatment

The statutory preference for treatment is not necessary since no remedy is required to protect human health and the environment.

Part 3: Five-Year Review Requirements

Because this remedy will not result in hazardous substances, pollutants, or contaminants remaining on site above levels that allow for unlimited use and unrestricted exposure, Five-Year reviews of the soils are not necessary. With regard to groundwater, because it is expected to take longer than five years to achieve cleanup goals, a Five-Year Review will be conducted in accordance with EPA policy. However, if cleanup goals are achieved within five years, a Five-Year Review will not be conducted.

AUTHORIZED SIGNATURE

George Pavlou, Acting Director
Emergency and Remedial
Response Division
EPA - Region II

9/30/03
Date

Decision Summary

Soils and Groundwater

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SITE NAME, LOCATION AND BRIEF DESCRIPTION

The Johnson and Towers site is located in Mount Laurel Township, in Burlington County, New Jersey. The site is bounded to the north by Route 38, to the east by Briggs Road, and to the south and west by fields and wooded areas (See Appendix I, Figure 1). The site, which covers 7.5 acres, is an active facility of the Johnson and Towers Company, and is surrounded by a fence on three sides. The unfenced side of the facility faces Briggs Road. The site includes a 54,000-square foot building for offices and the shop where engine repair and rebuilding activities occur, parking lots, driveways, and lawns. Much of the area surrounding the on-site building is used for vehicle parking. Johnson and Towers is in an area zoned for commercial/industrial use and the nearby properties are primarily commercial in nature. There are residential developments within approximately one mile southeast of the site that are separated from Johnson and Towers by open fields and wooded areas.

SITE HISTORY AND ENFORCEMENT ACTIVITIES

Johnson and Towers began remanufacturing and rebuilding diesel engines at this location in 1976. The facility primarily generated waste containing spent solvents, acids, caustics, and alcohols. Industrial wastewater containing some of these wastes was discharged into the shop floor drain system. Initially, the facility eliminated its wastewater by directing it into a series of concrete tanks, one of which was perforated to allow for percolation into the subsurface. In 1978, the wastewater disposal system was modified and expanded so that wastewater was rerouted to an oil/water separator prior to discharge in a shallow leach field of roughly 50 square feet.

The leach field was reportedly constructed as a shallow percolation field. The system consisted of a three-foot excavation in soils with a high clay content. The excavation was backfilled with two feet of crushed stone covered with one foot of soil. Four-inch perforated PVC distribution pipes were placed at the midpoint of the crushed stone layer.

The leach field became overloaded in a relatively short period due to the volume of wastewater and the shallowness of the water table. Occasionally, an industrial wastewater

hauling company was used to alleviate the problem. The leach field became overloaded and inoperable in the latter part of 1982.

In 1982, Johnson and Towers discontinued use of many cleaning products that were subsequently found in groundwater and altered the product-handling methods for others, so that it could be connected to the public sewer system. In 1983, the company connected its wastewater and sanitary systems to the Mount Laurel sewer system. Connection to the municipal sewer required modification and limited use of certain industrial products at the facilities. The composition of the wastewater entering the shop area floor drain system was also upgraded and carefully controlled.

After connection to the public sewer system, Johnson and Towers abandoned the leach field and removed the concrete tanks. Six-hundred tons of soil were removed from the seepage tank area. Clean soil was used as backfill. A 500-gallon fiberglass holding tank was placed in the excavation.

In 1983, EPA issued an Administrative Order of Consent (AOC) to investigate the nature and extent of the contamination caused by the wastewater discharge (from the servicing and manufacturing operations) to the subsurface seepage pit system and leach field.

In February 1985, Johnson and Towers submitted a report that showed contamination of the leach field, in addition to the presence of some contaminants in the groundwater monitoring wells downgradient from the leach field. Because these contaminants were identical to those detected in the leach field, the investigation confirmed groundwater contamination attributable to the facility. Therefore, in December of that year, a second AOC was issued to develop and implement a remedial plan to determine the full extent of other on-site and off-site contamination, and to formulate remedial steps to prevent further migration of hazardous wastes from the facility.

After issuance of the second AOC for the site, Johnson and Towers undertook a series of soil and groundwater investigations to characterize the full extent of the site problems. During the course of these investigations, additional underground tanks and piping were discovered and

removed. The last of these subsequent removal actions was completed in 1995.

Field investigations continued, with the installation of groundwater monitoring wells and collection of soil samples, until 1999, at which point EPA concluded it had enough information to begin a human health risk assessment for the site.

In 2000, Johnson and Towers prepared a Remedial Investigation report, which summarized the remaining problems at the site, and EPA prepared a preliminary Human Health Risk Assessment (HHRA) for the facility, which it provided to Johnson and Towers. In preparing the HHRA, EPA determined that additional data were needed in order to complete the HHRA. EPA then directed Johnson and Towers to collect these data, primarily with regard to the residual arsenic contamination found in groundwater at the site (arsenic had not been an original contaminant of concern at the site).

With the collection of additional data, EPA completed the HHRA in 2004. In 2006, a subsequent sampling event was performed at the site. This last round of sampling was needed prior to selecting a remedy for the site, because some of the data that EPA would otherwise need to rely on to select a remedy would have been over five years old. Thus, this last round of sampling was used to confirm that conditions were either unchanged or improving throughout the whole site.

In March of 2008, after reviewing these multiple submittals throughout the years, EPA concluded that these investigations effectively comprised a Remedial Investigation under Superfund, and that it was satisfied with the completeness of the investigation.

HIGHLIGHTS OF COMMUNITY PARTICIPATION

On July 30, 2008, EPA released the Proposed Plan and supporting documentation for the no further action remedy for soils and long-term monitoring for groundwater along with a well installation restriction for the site to the public for comment. EPA made these documents available to the public in the administrative record repositories maintained at the EPA Region II office (290 Broadway, New York, New York 10007) and the Mount Laurel Library (100

Walt Whitman Avenue, Mount Laurel, New Jersey 08054). EPA published a notice of availability involving these documents in the Burlington County Times newspaper, and opened a public comment period on the documents from July 30, 2008 to August 30, 2008.

On August 19, 2008, EPA held a public meeting at the Mount Laurel Township Municipal Courtroom, to inform local officials and interested citizens about the Superfund process, to review the planned remedial activities at the site, and to respond to any questions from area residents and other attendees.

No written comment was received during the public comment period. Oral comments and EPA's responses to them were recorded at the public meeting. See Responsiveness Summary (Appendix V).

SCOPE AND ROLE OF OPERABLE UNIT

This is the first and final remedy planned for the site, addressing the entire site.

SUMMARY OF SITE CHARACTERISTICS

Soil

Volatile Organic Compounds (VOCs) in Soils. The initial problems identified at the site were related to volatile organic compounds (VOCs), including the solvents methylene chloride and 2-butanone found in soils in the area of the underground storage tank and leach field. Initial sampling in 1986, collected from soils around the underground storage tank, identified soil contamination of methylene chloride as high as 71,000 parts per million (71,000 ppm).

In 1999, several years after completion of the last removal action, sampling results were compared to a set of screening values, which in the case of VOCs in soils were EPA's Industrial Soil Risk-Based Concentrations (RBCs). RBCs were developed by EPA for chemical screening during remedial investigations and as part of a Human Health Risk Assessment, to identify contaminants of potential concern. The soil samples that were screened were collected at depths ranging from surface soils (the first six inches) to as deep as ten feet. No VOCs in soils exceeded the RBCs, indicating that the earlier removal actions had removed the

contaminated soil that could be an ongoing source of groundwater contamination.

Arsenic in Soils. Beginning in approximately 1988, arsenic was found above health-based screening values in soils associated with the areas of VOC contamination at the site. There is no evidence that arsenic was used in any of the business operations at the site. Further studies were performed to attempt to identify the source of the arsenic.

1997 Results. Concentrations ranged between 2.3 and 34.2 ppm, with an average concentration of about 7.8 ppm, from under the former underground storage tank (UST) and leach field. The commercial RBC for arsenic is 3.8 ppm.

1998 Results. Concentrations ranged between non-detect and 9.8 ppm, with an average of 4.4 ppm for the leachate field. For test borings under the former UST, concentrations ranged from 3.7 to 9.6 ppm, averaging 6.0 ppm.

1999 Results. Concentrations from locations approximately 400 feet downgradient of the former UST area ranged between 9.5 and 34.1 ppm at various depths.

None of these values suggested the presence of an area of arsenic contamination that might be a source of groundwater contamination.

Groundwater

Groundwater beneath the site is part of the Englishtown aquifer. In Gloucester County, the Englishtown is considered a minor aquifer, although it is still used for potable water. It is a fair to good yielding aquifer depending on where the well is screened. The lower part is poorer yielding (more micaceous and silty) than the upper part of the aquifer. It has a maximum thickness of 220 feet, but, in the site area, it is probably about 80 to 100 feet thick.

As part of the site investigation, nine monitoring wells were installed, located in areas near the original leach field, and at the perimeter of the facility, upgradient and downgradient of the direction of groundwater flow (southeast). The monitoring wells were screened between seven and 17 feet below ground surface. The screening depths of the wells were selected to evaluate water quality in the shallow groundwater.

VOCs in Groundwater. In 1986, the maximum concentration of TCE in groundwater samples was 82.7 parts per billion (82.7 ppb). The tap water RBC for this compound was 1.6 ppb, and the New Jersey Groundwater Quality Standard is 1 ppb, and the primary drinking water standard, or Maximum Contaminant Level (MCL) is 1 ppb.

Back in 1989, methylene chloride was chosen as an indicator chemical because it was a potential carcinogen, in addition to being the compound most frequently detected in groundwater samples, at a maximum concentration of 127 ppb. The tap water RBC for this compound was 4.1 ppb, and the New Jersey Groundwater Quality Standard is 3 ppb.

Since 1999, no VOCs have been detected at concentrations that exceeded the RBCs or Groundwater Quality Standards.

Arsenic in groundwater.

1999 results. High levels of arsenic were found in groundwater sampled in two monitoring wells, MW-01 (318 ppb) and MW-06 (258 ppb). (Please refer to Figure 2.) These wells are less than 100 feet apart and are the nearest monitoring wells to the former leach field, suggesting a connection to the former dumping area. The tap water RBC for arsenic is 0.045 ppb, the New Jersey Groundwater Quality Standard is 3 ppb, and the MCL is 5 ppb. Arsenic in excess of these screening criteria was found in only one other well, MW-09, at 15 ppb. The direction of groundwater flow is to the southeast, so it is not clear that the contamination from the MW-01/MW-06 area would flow directly toward MW-09 without affecting other nearby wells. Several monitoring wells, in particular MW-03, MW-05, MW-08, and peziometer PZ4 appear to represent wells that are more directly down-gradient of the flow from the MW-01/MW-06 area, and these wells are not similarly affected.

2006 results. Between August 31 and September 5, 2006, seven groundwater monitoring wells and one piezometer were sampled. Groundwater samples analyzed for total metals indicated concentrations of arsenic of 270 ppb as the highest concentration on site, at well MW-01. MW-06 could not be sampled because it was temporarily inaccessible, though it is presumed for this remedy that concentrations in this well are similar to the levels found in 1999. Only

one other well (MW-09) had an arsenic concentration in exceedence of the New Jersey Ground Water Quality Criterion of 3 ppb. The concentration in MW-09 was 7 ppb, similar to the results from 1999.

Arsenic in the environment is present in one of several different chemical forms or "species." Determining which "species" of arsenic is present can sometimes provide clues to its origin, and this 2006 sampling event tested several site groundwater samples in this way. Speciated arsenic indicated concentrations of arsenic of 225 ppb for Arsenic III and 160 ppb for Arsenic V. Arsenic present in water is primarily in the form of inorganic arsenic (III and V); arsenic (III) is oxidized during water treatment to arsenic (V). However, the site-specific data did not help clarify the source of the arsenic. It has been suggested that naturally occurring arsenic present in soils in the area have been influenced by local conditions that make it more soluble, resulting in the localized elevated concentrations in groundwater. In addition, traces of pesticides have been detected in both groundwater and in soils of the site; these suggest that a previous land use, such as agriculture, can also account for arsenic in soil in the area. No other source of the arsenic has been identified.

Other contaminants in groundwater - 2006 results. Aluminum, iron and manganese, which are natural components of groundwater and are not likely associated with site activities, exceed the New Jersey Groundwater Quality Standards in monitoring wells MW-1, 2, 3, 5, 8 and 9. In general, concentrations of contaminants of concern (COCs) in groundwater (aluminum, arsenic, chromium and iron) have gone down or remained constant since the previous round of data was collected in 1999.

CURRENT AND POTENTIAL FUTURE SITE AND RESOURCE USES

Site Uses: Johnson and Towers is in an area zoned for commercial/industrial use and the nearby properties are primarily commercial in nature. There are residential developments within approximately one mile southeast of the site that are separated from Johnson and Towers by open fields and wooded areas.

Ground and Surface Water Uses: State records indicate that no residents are currently drinking groundwater within one mile downgradient of the site, and a municipal water supply

is available throughout the area. There are no potable wells at the site; the facility is connected to public water.

SUMMARY OF SITE RISKS

As part of the RI/FS, EPA conducted a baseline human health risk assessment (BHHRA) to estimate the current and future effects of contaminants on human health and the environment. A baseline risk assessment is an analysis of the potential adverse human health and ecological effects of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land uses. The baseline risk assessment includes a human health risk assessment and an ecological risk assessment. It provides the basis for taking action and identifies the contaminants and exposure pathways that need to be addressed by the remedial action. This section of the ROD summarizes the results of the baseline risk assessment for the site.

Human Health Risk Assessment

A four-step process is utilized for assessing site-related human health risks for a reasonable maximum exposure scenario: *Hazard Identification* - uses the analytical data collected to identify the contaminants of potential concern at the site for each medium, with consideration of a number of factors explained below; *Exposure Assessment* - estimates the magnitude of actual and/or potential human exposures, the frequency and duration of these exposures, and the pathways (e.g., ingesting contaminated well-water) by which humans are potentially exposed; *Toxicity Assessment* - determines the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure (dose) and severity of adverse effects (response); and *Risk Characterization* - summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site-related risks. The risk characterization also identifies contamination with concentrations which exceed acceptable levels, defined by the NCP as an excess lifetime cancer risk greater than 1×10^{-6} to 1×10^{-4} or a Hazard Index greater than 1.0; contaminants at these concentrations are considered chemicals of concern (COCs) and are typically those that will require remediation at the site. Also

included in this section is a discussion of the uncertainties associated with these risks.

Hazard Identification

In this step, the chemicals of potential concern (COPCs) in each medium were identified based on such factors as toxicity, frequency of occurrence, fate and transport of the contaminants in the environment, concentrations, mobility, persistence, and bioaccumulation. Contamination in the surface soils, surface and subsurface soils, and groundwater was evaluated to identify those chemicals that are present at concentrations that require more thorough evaluation. Exposure to surface soils and to surface and subsurface soils was evaluated separately, based on the fact that site workers would be exposed to surface soils only, while construction workers would be exposed to both surface and subsurface soils. This list of COPCs, which is carried through the quantitative assessment, can be found in the BHHRA. The quantitative evaluation of COPCs in the surface soils and subsurface soils did not indicate any cancer risks or noncancer hazards that exceeded EPA's acceptable risk levels. The evaluation of groundwater did identify arsenic as the chemical of concern (COC), or the chemical that contributes to the unacceptable risk level. Table 1 includes the list of COPCs in surface soils and in surface and subsurface soils and the COC in groundwater. A complete list of all COPCs in site media can be found in the BHHRA in the Administrative Record.

Exposure Assessment

Consistent with Superfund policy and guidance, the updated risk evaluation assumed no remediation or institutional controls to mitigate or remove hazardous substance releases. Cancer risks and noncancer hazard indices were calculated based on an estimate of the reasonable maximum exposure (RME) expected to occur under current and future conditions at the site. The RME is defined as the highest exposure that is reasonably expected to occur at a site.

The site is currently zoned for commercial/industrial use and the surrounding properties are primarily commercial in nature. Future land use is expected to remain the same. Residential exposure to surface soils was not evaluated since land use is expected to remain commercial for the foreseeable future. In order to demonstrate that the site

could be developed for unrestricted use in the future, however, a supplemental risk evaluation was done to show that, using standard exposure assumptions, residential exposure (both adults and children) to surface soil would not be of concern (see Summary of Supplemental Risk Evaluation section, below).

The baseline risk assessment evaluated health effects that could occur from exposure to contaminated groundwater and soil by current and future site workers (surface soils only), as well as future construction workers (surface and subsurface soils). Since the State designation of groundwater is as a potable water supply, hypothetical ingestion of groundwater by future off-site residents was also evaluated. A summary of the exposure pathways that were associated with groundwater exposure can be found in Table 2. Typically, exposures are evaluated using a statistical estimate of the exposure point concentration, which is usually an upper-bound estimate of the average concentration for each contaminant, but in some cases may be the maximum detected concentration. A summary of the exposure point concentrations for the COPCs in surface and subsurface soils and the COC in groundwater can be found in Table 1, while a comprehensive list of the exposure point concentrations (EPCs) for all COPCs can be found in the BHHRA.

Toxicity Assessment

Under current EPA guidelines, the likelihood of carcinogenic risks and noncancer hazards due to exposure to site chemicals are considered separately. Consistent with current EPA policy, it was assumed that the toxic effects of the site-related chemicals would be additive. Thus, cancer and noncancer risks associated with exposures to individual COPCs were summed to indicate the potential risks and hazards associated with mixtures of potential carcinogens and noncarcinogens, respectively.

Toxicity data for the human health risk assessment were provided by the Integrated Risk Information System (IRIS) database, the Provisional Peer Reviewed Toxicity Database (PPRTV), or another source that is identified as an appropriate reference for toxicity values consistent with EPA's directive on toxicity values. This information is presented in Table 3 (noncancer toxicity data summary) and Table 4 (cancer toxicity data summary).

Risk Characterization

Noncarcinogenic risks were assessed using a hazard index (HI) approach, based on a comparison of expected contaminant intakes and benchmark comparison levels of intake (reference doses, reference concentrations). Reference doses (RfDs) and reference concentrations (RfCs) are estimates of daily exposure levels for humans (including sensitive individuals) which are thought to be safe over a lifetime of exposure. The estimated intake of chemicals identified in environmental media (*e.g.*, the amount of a chemical ingested from contaminated drinking water) is compared to the RfD or the RfC to derive the hazard quotient (HQ) for the contaminant in the particular medium. The HI is obtained by adding the hazard quotients for all compounds within a particular medium that impacts a particular receptor population.

The HQ for oral and dermal exposures is calculated as below. The HQ for inhalation exposures is calculated using a similar model that incorporates the RfC, rather than the RfD.

HQ = Intake/RfD

Where: HQ = hazard quotient
Intake = estimated intake for a chemical (mg/kg-day)
RfD = reference dose (mg/kg-day)

The intake and the RfD will represent the same exposure period (i.e., chronic, subchronic, or acute).

As previously stated, the HI is calculated by summing the HQs for all chemicals for likely exposure scenarios for a specific population. An HI greater than 1.0 indicates that the potential exists for noncarcinogenic health effects to occur as a result of site-related exposures, with the potential for health effects increasing as the HI increases. When the HI calculated for all chemicals for a specific population exceeds 1.0, separate HI values are then calculated for those chemicals which are known to act on the same target organ. These discrete HI values are then compared to the acceptable limit of 1.0 to evaluate the potential for noncancer health effects on a specific target organ. The HI provides a useful reference point for gauging

the potential significance of multiple contaminant exposures within a single medium or across media. A summary of the noncarcinogenic risks associated with these chemicals for each exposure pathway is contained in Table 5.

It can be seen in Table 5 that the HI for noncancer effects due to potential exposure to the COPCs in surface soils (current/future site worker) and in surface and subsurface soils (future construction worker) is less than 1. The HQ for arsenic in groundwater is 170 for a future resident using the contaminated water for potable purposes. The noncarcinogenic hazard for hypothetical future residential exposure to groundwater as a drinking water source is attributable primarily to arsenic and is above the acceptable EPA value of 1.

For carcinogens, risks are generally expressed as the incremental probability of an individual developing cancer over a lifetime as a result of exposure to a carcinogen, using the cancer slope factor (SF) for oral and dermal exposures and the inhalation unit risk (IUR) for inhalation exposures. Excess lifetime cancer risk for oral and dermal exposures is calculated from the following equation, while the equation for inhalation exposures uses the IUR, rather than the SF:

Risk = LADD x SF

Where: Risk = a unitless probability (1×10^{-6}) of an individual developing cancer
LADD = lifetime average daily dose averaged over 70 years (mg/kg-day)
SF = cancer slope factor, expressed as [1/(mg/kg-day)]

These risks are probabilities that are usually expressed in scientific notation (such as 1×10^{-4}). An excess lifetime cancer risk of 1×10^{-4} indicates that one additional incidence of cancer may occur in a population of 10,000 people who are exposed under the conditions identified in the assessment. Again, as stated in the National Contingency Plan, the acceptable risk range for site-related exposure is 10^{-6} to 10^{-4}.

Results of the updated risk evaluation are presented in Table 6. The results indicate that risks from exposure to surface soils and for surface and subsurface soils are

within the acceptable risk range for all populations, while the hypothetical resident (6×10^{-3}) risk value exceeds the acceptable EPA risk range. In addition, the maximum detected concentration of arsenic that is included in the risk assessment is 318 ppb, which exceeds the federal drinking water maximum contaminant concentration (MCL) of 10 ppb and the state groundwater standard of 3 ppb.

In summary, the BHHRA concluded that arsenic in groundwater contributes to unacceptable hazards to receptor populations that may use the contaminated groundwater in the future.

Summary of Supplemental Risk Evaluation

In the 2004 Human Health Risk Assessment (HHRA) performed by EPA, residential exposure to surface soils was not evaluated because land use is expected to remain commercial. A supplemental risk evaluation was performed to confirm that, should the site be developed residentially, exposure to surface soil would not be of concern.

In the 2004 HHRA, the maximum concentration of each compound in the surface soil (considered to be 0-2 feet) was screened for inclusion in the quantitative assessment using EPA Region 9 residential preliminary remediation goals (PRGs) (October 2004). The PRGs represent a cancer risk of one in a million (1x10-6) and/or a hazard quotient of 1. The following compounds were retained for further analysis: aluminum, arsenic, chromium VI, iron, manganese, and thallium. Exposure point concentrations for each COPC were developed (Table 1).

In the supplemental evaluation, the EPCs were compared once again to the Region 9 PRGs (Table 7). The PRGs combine current human health toxicity values with standard exposure factors to estimate contaminant concentrations in environmental media that are considered by the Agency to be health protective of human exposures (including sensitive groups), over a lifetime.

Table 8 contains the estimates of cumulative risk and hazard for the resident based on a comparison of the EPCs with the PRGs. The excess lifetime cancer risk is 2.2×10^{-5}, which is within the acceptable risk range of 10^{-6} to 10^{-4}. The hazard index is 1.8, which is slightly above the threshold of 1. However, the assumption that 100 percent

of the chromium measured on-site is the hexavalent form is highly conservative and the oral reference dose for iron has been revised upward since the 2004 risk assessment was performed. These two factors, coupled with the fact that none of the COPCs affect the same target organ, mean that noncancer health effects are not expected to occur. Therefore, residential exposure to surface soils is not of concern and the site meets the unrestricted use threshold.

Uncertainties

The procedures and inputs used to assess risks in this evaluation, as in all such assessments, are subject to a wide variety of uncertainties. In general, the main sources of uncertainty include:

- environmental chemistry sampling and analysis
- environmental parameter measurement
- fate and transport modeling
- exposure parameter estimation
- toxicological data.

Uncertainty in environmental sampling arises in part from the potentially uneven distribution of chemicals in the media sampled. Consequently, there may be significant uncertainty as to the actual levels present. Environmental chemistry-analysis error can stem from several sources including the errors inherent in the analytical methods and characteristics of the matrix being sampled.

Uncertainties in the exposure assessment are related to estimates of how often an individual would actually come in contact with the chemicals of concern, the period of time over which such exposure would occur, and in the models used to estimate the concentrations of the chemicals of concern at the point of exposure.

Uncertainties in toxicological data occur in extrapolating both from animals to humans and from high to low doses of exposure, as well as from the difficulties in assessing the toxicity of a mixture of chemicals. These uncertainties are addressed by making conservative assumptions concerning risk and exposure parameters throughout the assessment. As a result, the risk assessment provides upper-bound estimates of the risks to populations near the site, and is highly unlikely to underestimate actual risks related to the site.

More specific information concerning public health risks, including a quantitative evaluation of the degree of risk associated with various exposure pathways, is presented in the risk assessment report.

SELECTED REMEDY

After careful consideration of Site-specific details and an analysis of data collected, EPA has determined that a No Further Action remedy for soils and a No Action remedy, with monitoring, is the appropriate remedy for groundwater at this site. EPA has determined that this remedial approach is protective of human health and the environment based on a number of site-specific factors including the following:

- Surface and subsurface soil sampling indicated that risks from exposure to surface soils and for surface and subsurface soils are within the acceptable risk range for all populations. In addition, soil sampling did not identify any continuing sources of groundwater contamination remaining at the site.

- Groundwater sampling of the MW-01/MW-06 well cluster, and to a much lesser degree MW-09, showed a persistent level of arsenic in groundwater at concentrations greater than the screening levels and New Jersey's Groundwater Quality Standard; however, these elevated levels occur in only these monitoring wells at the site. The remaining monitoring wells at the site, including wells at the perimeter of the facility and directly downgradient of the MW-01/MW-06 cluster, have been consistently below the screening criteria, which are more stringent than drinking water standards, for the past seven years, indicating that arsenic is not migrating downgradient.

- The monitoring data show that the area of residual groundwater contamination is localized, and limited in extent, confined to groundwater on a portion of the Johnson and Towers property. Given the current size and shallow extent of the problem, it is not expected to affect the overall availability of the groundwater resources in the area.

- Since water is provided to the businesses and residents in the vicinity of the Site via the local water company,

there is no reason that a potable well would be installed. The area of affected groundwater is currently not in use, has little potential to be used in the future, and steps to prevent its use are readily implementable. In addition, there is little likelihood of groundwater contaminant migration in the future.

- Because no source of the groundwater contamination was identified (such as nearby contaminated soils), EPA expects that the arsenic in groundwater will eventually disperse and the levels measured in the groundwater will not exceed the drinking water standards.

- The BHRRA determined that the contaminated groundwater, if used by receptor populations (e.g., for drinking water), would pose unacceptable hazards. Although human health risks to potential future groundwater users are elevated, they would only occur if a potable well were installed in the area of contamination, or in an area that could draw water from the area of contamination. Currently, no potable or non-potable pumping wells are in use on the Johnson and Towers facility or on properties immediately adjacent to the site; therefore, currently the residually contaminated groundwater poses no elevated risk to human health.

- EPA will require annual monitoring of the groundwater while the contamination exceeds the New Jersey Groundwater Quality Standard of 3.0 ppb for arsenic, and for three years after the groundwater no longer exceeds this standard.

- The groundwater monitoring will include testing for arsenic and for VOCs and will evaluate whether conditions have changed, in particular whether the area of groundwater contamination has expanded beyond its current extent.

- If monitoring indicates that arsenic or VOCs in excess of New Jersey Groundwater Quality Standards may migrate off the Johnson and Towers property, additional measures, such as a new remedial action to prevent off-site migration, may be necessary, as determined by EPA in consultation with the New Jersey Department of Environmental Protection.

EPA's goal for the groundwater remedy at the Site is to restore the groundwater to a beneficial use as a drinking water source. Earlier removal actions excavating contaminated soil removed the source of the VOC groundwater contamination. Groundwater sampling performed since that time has shown that the VOC concentrations of the groundwater have decreased to the extent that VOCs are no longer considered a problem at the site. The residual arsenic contamination is limited to a small area near the wells MW-01/MW-06 well cluster.

As part of the No Action remedy, a groundwater monitoring program will be implemented. The monitoring will assure that the No Action remedy remains effective and protective of human health and the environment. If results clearly show that contaminant concentrations in groundwater have decreased to levels below drinking water standards, then monitoring may be discontinued. Alternatively, future remedial action may be proposed if monitoring shows that the concentrations of arsenic do not decrease to levels below drinking water standards.

In accordance with New Jersey regulations, institutional controls, in the form of a groundwater Classification Exception Area (CEA), will be established for the Site until contaminant concentrations are below drinking water standards. EPA will work with NJDEP to ensure that a CEA is established for the Site.

STATUTORY DETERMINATIONS

No remedial action is necessary to be protective of human health and the environment.

Five-Year Review Requirements

Because it is expected to take longer than five years to achieve cleanup goals, a Five-Year Review will be conducted in accordance with EPA policy. However, if cleanup goals are achieved within five years, a Five-Year Review will not be conducted.

State/Support Agency Acceptance

The State of New Jersey concurs with this Remedy.

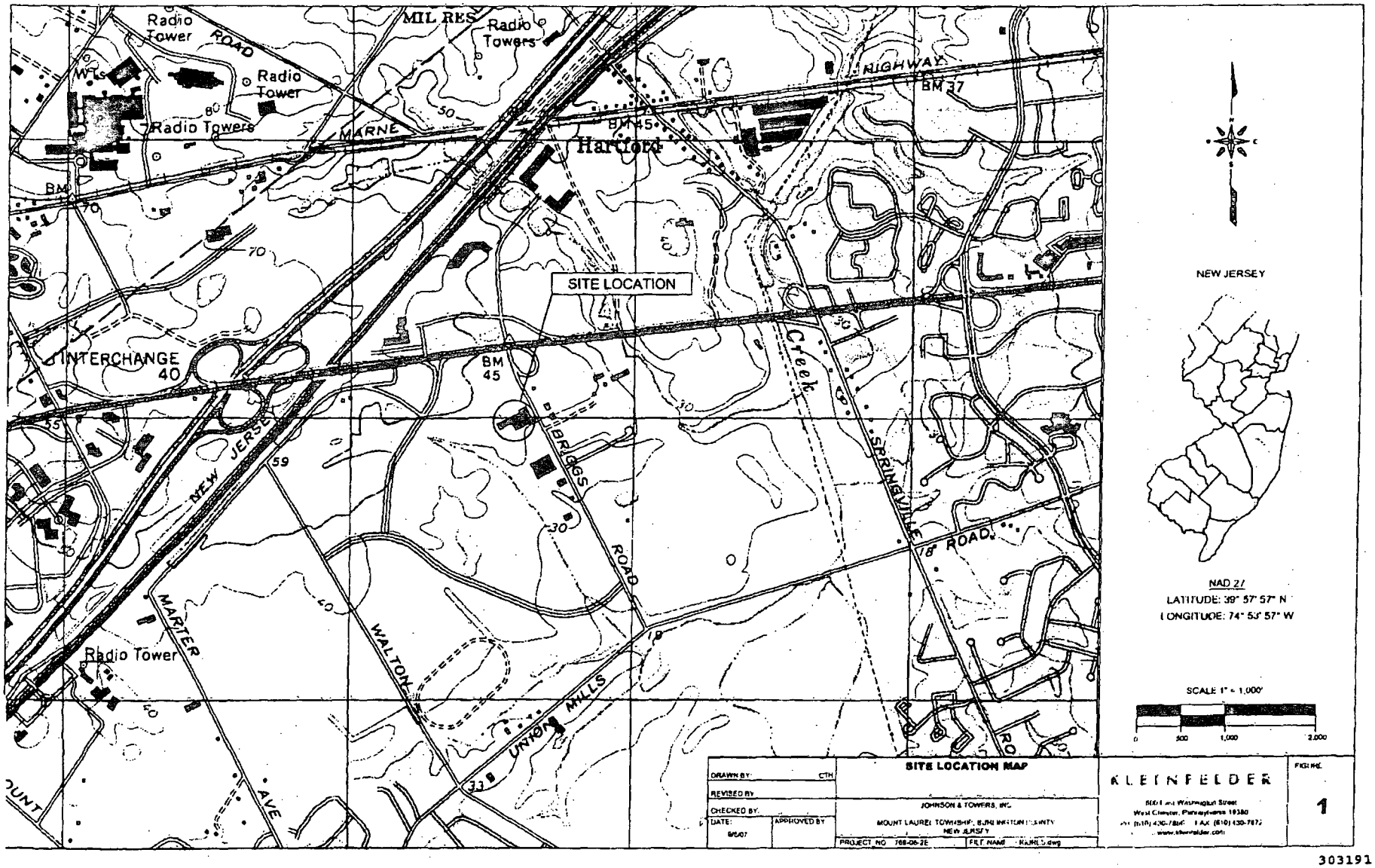
DOCUMENTATION OF SIGNIFICANT CHANGES

The Proposed Plan for the Johnson & Towers site was released for public comment on July 30, 2008. The comment period closed on August 30, 2008.

Upon review of all comments recorded, EPA determined that no significant changes to the Selected Remedy, as it was presented in the Proposed Plan, are warranted.

APPENDIX I

FIGURES



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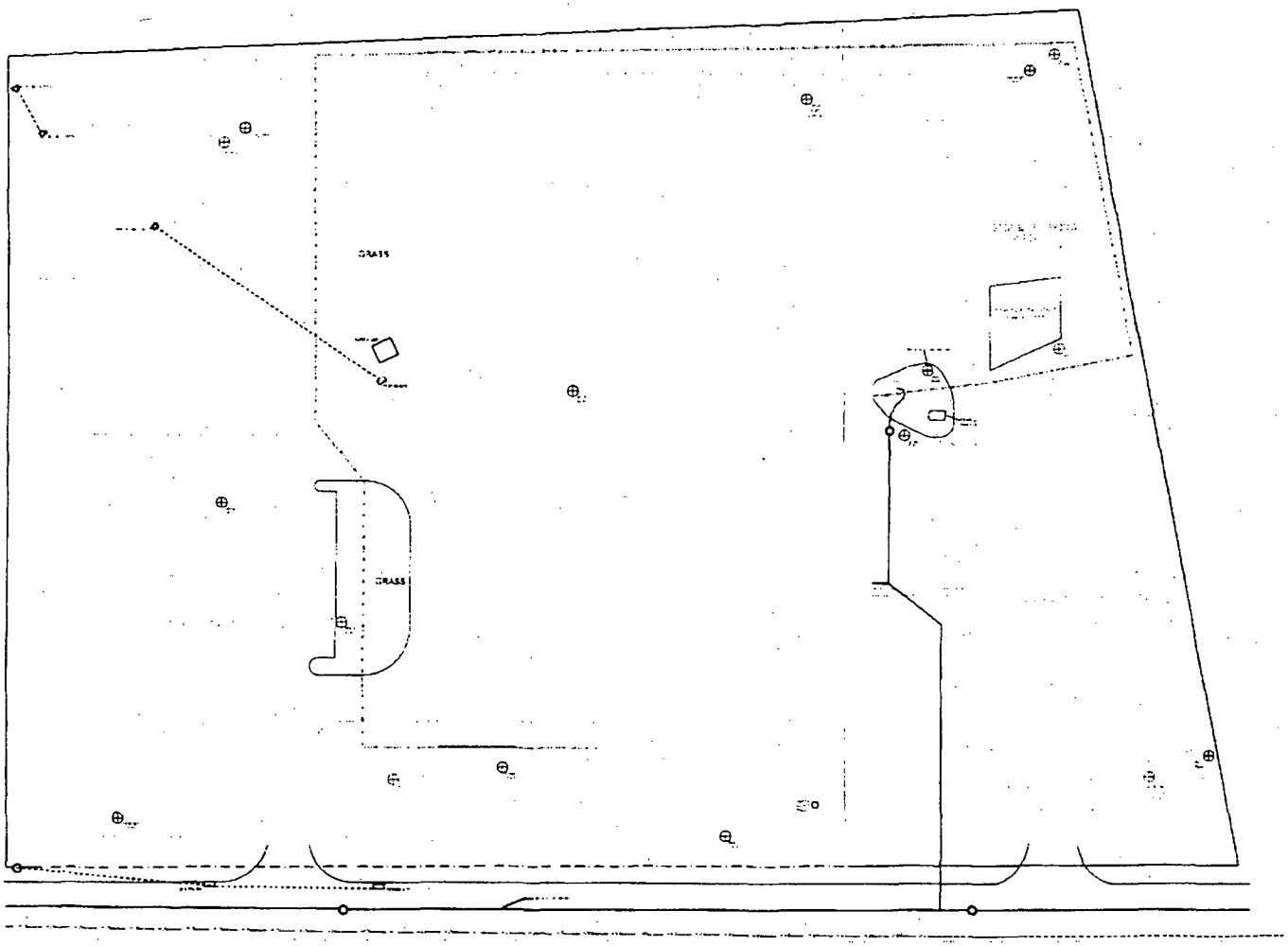

LEGEND

- MONITORING WELL LOCATION (PVC CASING ELEVATION)
- PIEZOMETER LOCATION
- PROPOSED MONITORING WELL LOCATION
- EXISTING MANHOLE
- WATER MAINLINE

SCALE 1" = 50'

0 25 50 100 150

SITE PLAN

DRAWN BY: BAD
REVISED BY:
CHECKED BY:
DATE: 1/1/08
APPROVED BY:

JOHNSON & TOWERS, INC.
MOUNT LAUREL TOWNSHIP, BURLINGTON COUNTY
NEW JERSEY
PROJECT NO. 163-06-2E
FILE NAME: BASE PLAN.dwg

KLEINFELDER
100 East Washington Street
West Chester, Pennsylvania 19380
Ph. (610) 430-7988 FAX (610) 436-7972
www.kleinfelder.com

PLATE 2

500026

APPENDIX II

TABLES

TABLE 1
Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

Scenario Timeframe: Future
Medium: Groundwater
Exposure Medium: Groundwater

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Tap Water	Arsenic	15	318	µg/L	4/10	318	µg/L	MAX

MAX: Maximum Detected Concentration

Scenario Timeframe: Future
Medium: Surface Soil
Exposure Medium: Surface Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Soil	Aluminum	3550	10400	µg/Kg	13/13	8520	µg/Kg	95% UCL-T
	Arsenic	2.8	12.5	µg/Kg	13/13	9.8	µg/Kg	95% UCL-T
	Chromium	10.1	28.9	µg/Kg	13/13	20	µg/Kg	95% UCL-T
	Iron	9870	26700	µg/Kg	13/13	17500	µg/Kg	95% UCL-T
	Manganese	18.4	351	µg/Kg	13/13	225	µg/Kg	95% UCL-T
	Thallium	2.1	2.2	µg/Kg	3/13	1.5	µg/Kg	95% UCL-T

95% UCL-T: 95% Upper Confidence Limit for Log-Transformed Data

Scenario Timeframe: Future
Medium: Surface and Subsurface Soil
Exposure Medium: Surface and Subsurface Soil

Exposure Point	Chemical of Concern	Concentration Detected		Concentration Units	Frequency of Detection	Exposure Point Concentration (EPC)	EPC Units	Statistical Measure
		Min	Max					
Soil	Aluminum	275	10400	µg/Kg	35/35	7280	µg/Kg	95% UCL-T
	Arsenic	2.4	34.1	µg/Kg	30/35	12	µg/Kg	95% UCL-T
	Chromium	1.96	35	µg/Kg	35/35	18	µg/Kg	95% UCL-T
	Iron	1030	26700	µg/Kg	35/35	13000	µg/Kg	95% UCL-T
	Manganese	1.24	351	µg/Kg	32/35	72	µg/Kg	95% UCL-T
	Thallium	2.1	2.2	µg/Kg	3/35	1	µg/Kg	95% UCL-T

95% UCL-T: 95% Upper Confidence Limit for Log-Transformed Data

Summary of Chemicals of Concern and Medium-Specific Exposure Point Concentrations

This table presents the chemicals of concern (COCs) and exposure point concentrations (EPCs) for each of the COCs detected in soil and groundwater (i.e., the concentration that will be used to estimate the exposure and risk from each COC in soil and groundwater). The table includes the range of concentrations detected for each COC, as well as the frequency of detection (i.e., the number of times the chemical was detected in the samples collected at the site), the EPC and how it was derived.

TABLE 2

SELECTION OF EXPOSURE PATHWAYS

Scenario Timeframe	Medium	Exposure Medium	Exposure Point	Receptor Population	Receptor Age	Exposure Route	On-Site/ Off-Site	Type of Analysis	Rationale for Selection or Exclusion of Exposure Pathway
Future	Groundwater	Groundwater	Tap Water	Off-Site Residents	Child & Adult	Dermal/ Ingestion	Off-Site	Quant	No current exposure; groundwater classified as Potable; residents live off-site and downgradient.
		Air	Water Vapors at Showerhead	Residents	Child & Adult	Inhalation	Off-Site	Qual	No current exposure; groundwater classified as Potable; residents live off-site and downgradient. Not expectd to be a significant exposure pathway.
Current/ Future	Surface Soil	Surface Soil	Surface Soil	Site Worker	Adult	Dermal/ Ingestion	Off-Site	Quant	Current and poast land use has been industrial.
Future	Surface and Subsurface Soil	Surface and Subsurface Soil	Surface and Subsurface Soil	Construct. Worker	Adult	Dermal/ Ingestion	On-Site	Quant	Potential redevelopment/redesign of site is possible in future.

Quant = Quantitative risk analysis performed.

Qual = Qualitative risk evaluation is performed.

Summary of Selection of Exposure Pathways

The table describes the exposure pathways associated with the groundwater that were evaluated for the risk assessment, and the rationale for the inclusion of each pathway. Exposure media, exposure points, and characteristics of receptor populations are included.

TABLE 3

Non-Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Chronic/ Subchronic	Oral RfD Value	Oral RfD Units	Absorp. Efficiency (Dermal)	Adjusted RfD (Dermal)	Adj. Dermal RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates of RfD:
Aluminum	Chronic	1E+00	mg/kg-day	100%	1E+00	mg/kg-day	--	--	HEAST	01/01/97
Arsenic	Chronic	3E-04	mg/kg-day	100%	3E-04	mg/kg-day	Skin	3000	IRIS	3/14/99
Chromium III	Chronic	3E-03	mg/kg-day	2.5%	7.5E-05	mg/kg-day	NOAEL	900	IRIS	03/02/00
Chromium VI	Chronic	1E+00	mg/kg-day	1.3%	1.95E-02	mg/kg-day	NOAEL	1000	IRIS	03/02/00
Iron	Chronic	3E-01	mg/kg-day	100%	3E-01	mg/kg-day	--	--	NCEA	07/05/00
Manganese	Chronic	1.4E-01	mg/kg-day	100%	1.4E-01	mg/kg-day	CNS	1000	IRIS	05/12/95
Thallium	Chronic	8E-05	mg/kg-day	1000	8e-05	mg/kg-day	Liver	3000	IRIS	09/01/90

Pathway: Inhalation

Chemical of Concern	Chronic/ Subchronic	Inhalation RfC	Inhalation RfC Units	Inhalation RfD	Inhalation RfD Units	Primary Target Organ	Combined Uncertainty /Modifying Factors	Sources of RfD: Target Organ	Dates:
Aluminum	Chronic	NA	mg/m3	1.4E-03	mg/kg-day	--	--	NCEA	07/05/00
Arsenic	Chronic	NA	mg/m3	NA	mg/kg-day			IRIS	
Chromium	Chronic	NA	mg/m3	NA	mg/kg-day			IRIS	
Iron	Chronic	NA	mg/m3	NA	mg/kg-day			IRIS	
Manganese	Chronic	5E-05	mg/m3	NA	mg/kg-day	CNS	1000	IRIS	09/23/93
Thallium	Chronic	NA	mg/m3	NA	mg/kg-day			IRIS	

Key

NA: No information available
IRIS: Integrated Risk Information System, U.S. EPA
NCEA: National Center for Environmental Assessment
HEAST: Health Effects Assessment Summary Tables
CNS: Central Nervous System

Summary of Toxicity Assessment

This table provides non-carcinogenic risk information which is relevant to the contaminants of concern in soil and groundwater. When available, the chronic toxicity data have been used to develop oral reference doses (RfDs) and inhalation reference doses (RfDi).

TABLE 4

Cancer Toxicity Data Summary

Pathway: Oral/Dermal

Chemical of Concern	Oral Cancer Slope Factor	Units	Adjusted Cancer Slope Factor (for Dermal)	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Aluminum	NA	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	D	IRIS	
Arsenic	1.5E+00	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	A	IRIS	07/05/08
Chromium	NA	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	D	IRIS	
Iron	NA	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	D	IRIS	
Manganese	NA	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	D	IRIS	
Thallium	NA	$(mg/kg/day)^{-1}$	NA	$(mg/kg/day)^{-1}$	D	IRIS	

Pathway: Inhalation

Chemical of Concern	Unit Risk	Units	Inhalation Slope Factor	Slope Factor Units	Weight of Evidence/ Cancer Guideline Description	Source	Date
Aluminum	NA	$(mg/m^3)^{-1}$		$(mg/kg\text{-}day)^{-1}$	D	IRIS	
Arsenic	4.3E-03	$(mg/m^3)^{-1}$	1.5E+01	$(mg/kg\text{-}day)^{-1}$	A	IRIS	07/05/08
Chromium	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	D	IRIS	
Iron	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	D	IRIS	
Manganese	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	D	IRIS	
Thallium	NA	$(mg/m^3)^{-1}$	NA	$(mg/kg\text{-}day)^{-1}$	D	IRIS	

Key:

IRIS: Integrated Risk Information System. U.S. EPA
NA: No information available

EPA Weight of Evidence:

A - Human carcinogen
B1 - Probable Human Carcinogen-Indicates that limited human data are available
B2 - Probable Human Carcinogen-Indicates sufficient evidence in animals associated with the site and inadequate or no evidence in humans
C - Possible human carcinogen
D - Not classifiable as a human carcinogen
E- Evidence of noncarcinogenicity

Summary of Toxicity Assessment

This table provides carcinogenic risk information which is relevant to the contaminants of concern in soil and groundwater. Toxicity data are provided for both the oral and inhalation routes of exposure.

TABLE 5

Risk Characterization Summary - Noncarcinogens

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child & Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Ground-water	Ground-water	Tap Water	Arsenic	Skin	100	--	--	100
							Groundwater Hazard Index Total [1] =	170

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface Soils	Surface Soils	Surface Soils	Aluminum	--	3.5E-03	--	--	3.5E-03
			Arsenic	Skin	1.2E-02	--	4.9E-03	1.7E-02
			Chromium	NOAEL	2.7E-03	--	--	2.7E-03
			Iron	NOAEL	2.4E-02	--	--	2.4E-02
			Manganese	--	3.2E-04	--	--	3.2E-04
			Thallium	CNS	6.1E-03	--	--	6.1E-03
							Soils Hazard Index Total [1] =	5.4E-02

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk			
					Ingestion	Inhalation	Dermal	Exposure Routes Total
Surface and Subsurf. Soils	Surface and Subsurf. Soils	Surface and Subsurf. Soils	Aluminum	--	--	--	--	
			Arsenic	Skin	1.1E-01	--	6.8E-03	1.2E-01
			Chromium	NOAEL	--	--	--	
			Iron	NOAEL	--	--	--	
			Manganese	--	--	--	--	
			Thallium	CNS	--	--	--	
							Soils Hazard Index Total [1] =	1.2E-01

The HI represents the summed HQs for all chemicals of potential concern at the site, not just those chemicals requiring remedial action which are shown here.

Summary of Risk Characterization - Non-Carcinogens

The table presents hazard quotients (HQs) for each route of exposure and the hazard index (sum of hazard quotients) for all routes of exposure. The Risk Assessment Guidance for Superfund states that, generally, a hazard index (HI) greater than 1 indicates the potential for adverse non-cancer effects. The HI for both surface soils and surface and subsurface soils is less than 1. The HI for groundwater exceeds the benchmark of 1, and is driven by Arsenic. The HI value represents the sum of the HQ values for all COPCs; therefore, it is greater than the HQ for Arsenic.

TABLE 6

Risk Characterization Summary - Carcinogens

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Child & Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Groundwater	Groundwater	Tap Water	Arsenic	6E-03	--	--	6E-03
						Total Risk =	6E-03

Scenario Timeframe: Current/Future
Receptor Population: Site Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soils	Soils	Soils	Aluminum	--	--	--	
			Arsenic	2.0E-06	--	7.9E-07	3E-06
			Chromium	--	--	--	
			Iron	--	--	--	
			Manganese	--	--	--	
			Thallium	--	--	--	
						Total Risk =	3E-06

Scenario Timeframe: Future
Receptor Population: Construction Worker
Receptor Age: Adult

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk			
				Ingestion	Inhalation	Dermal	Exposure Routes Total
Soils	Soils	Soils	Aluminum	--	--	--	
			Arsenic	7.1E-07	--	4.4E-08	8E-07
			Chromium	--	--	--	
			Iron	--	--	--	
			Manganese	--	--	--	
			Thallium	--	--	--	
						Total Risk =	8E-07

Summary of Risk Characterization - Carcinogens

The table presents cancer risks for each route of exposure and for all routes of exposure combined. As stated in the National Contingency Plan, the acceptable risk range for site-related exposure is 10^{-6} to 10^{-4}. The Cancer Risk for groundwater exceeds the benchmark of 1, and is driven by Arsenic. The Cancer Risk for both surface soils and surface and subsurface soils within or less than the acceptable limit.

Table 7. Exposure Point Concentration for surface soil COPCS compared to Region 9 Preliminary Remediation Goals

Compound	PRG (mg/kg)	EPC (mg/kg)
Aluminum	76,000 nc	7,728.4
Arsenic	0.39 c / 22 nc	8.2
Chromium VI	30 c / 230 nc	18.8
Iron	23,000 nc	16129.9
Manganese	1800 nc	259.0
Thallium	5.2 nc	2.1

c = cancer, nc = noncancer

Table 8. Summary of risk and hazard estimates

Non-cancer

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult & Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk
					Exposure Routes Total
Surface Soils	Surface Soils	Surface Soils	Aluminum	--	0.1
			Arsenic	Skin	0.4
			Chromium VI	NOAEL	0.1
			Iron	NOAEL	0.7
			Manganese	--	0.1
			Thallium	CNS	0.4
				Soils Hazard Index Total =	1.8

Cancer

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult & Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk
				Exposure Routes Total
Surface Soils	Surface Soils	Surface Soils	Aluminum	NA
			Arsenic	2.1E-05
			Chromium VI	6.3E-07
			Iron	NA
			Manganese	NA
			Thallium	NA
			Total Risk =	2.2E-05

Table 7

Supplemental Risk Evaluation
Exposure Point Concentration for surface soil COPCS
compared to Region 9 Preliminary Remediation Goals

Compound	PRG (mg/kg)	EPC (mg/kg)
Aluminum	76,000 nc	7,728.4
Arsenic	0.39 c / 22 nc	8.2
Chromium VI	30 c / 230 nc	18.8
Iron	23,000 nc	16129.9
Manganese	1800 nc	259.0
Thallium	5.2 nc	2.1

c = cancer, nc = noncancer

Table 8

Supplemental Risk Evaluation
Summary of Risk and Hazard Estimates

Non-cancer

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult & Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Primary Target Organ	Non-Carcinogenic Risk
					Exposure Routes Total
Surface Soils	Surface Soils	Surface Soils	Aluminum	--	0.1
			Arsenic	Skin	0.4
			Chromium VI	NOAEL	0.1
			Iron	NOAEL	0.7
			Manganese	--	0.1
			Thallium	CNS	0.4
				Soils Hazard Index Total =	1.8

Cancer

Scenario Timeframe: Future
Receptor Population: Resident
Receptor Age: Adult & Child

Medium	Exposure Medium	Exposure Point	Chemical of Concern	Carcinogenic Risk
				Exposure Routes Total
Surface Soils	Surface Soils	Surface Soils	Aluminum	NA
			Arsenic	2.1E-05
			Chromium VI	6.3E-07
			Iron	NA
			Manganese	NA
			Thallium	NA
			Total Risk =	2.2E-05

APPENDIX III

ADMINISTRATIVE RECORD INDEX

JOHNSON & TOWERS SITE
ADMINISTRATIVE RECORD FILE
INDEX OF DOCUMENTS

1.0 SITE IDENTIFICATION

1.1 Background - RCRA and Other Information

P. 100001 - 100004 Report: Johnson & Towers, Inc., General Information, undated.

3.0 REMEDIAL INVESTIGATION

3.2 Sampling and Analysis Data/Chain of Custody Forms

Letter to Ms. Marilyn Haye, U.S. Environmental Protection Agency, Region 2, from Mr. James Ashworth, Jr., Corporate Environmental Manager, Johnson & Towers, Inc., September 27, 1988, re: Sample Analysis for Johnson & Towers, Inc., Mount Laurel, New Jersey. (Attachment: Report: Analytical Report, Volume I, Part I, Report #'s: 88-1269 & 88-1280, prepared by Greylag Technology, prepared for NET Mid-Atlantic, Inc., June 25, 1988).[1]

Report: Analytical Report, Volume I, Part II, Report #'s: 88-1269 & 88-1280, prepared by Greylag Technology, prepared for NET Mid-Atlantic, Inc., June 25, 1988.[1]

Report: Analytical Report, Volume II, Report #'s: 88-1269 & 88-1280, prepared by Greylag Technology, prepared for NET Mid-Atlantic, Inc., June 25, 1988.[1]

Letter to Mr. James Haklar, P.E., U.S. Environmental Protection Agency, Region 2, from Ms. Gloria G. Hunsberger, C.P.G., Senior Hydrogeologist, Powell-Harpstead, Inc., re: Public and Private Wells, Johnson & Towers, Inc.'s Mount Laurel Facility, Mount Laurel, New Jersey, June 28, 1994.[1]

Letter to Mr. James Haklar, P.E., U.S Environmental Protection Agency, Region 2, from Ms. Gloria G. Hunsberger, P.G., Project Manager, Powell-Harpstead, Inc., re: Oil/Water Separator System - Contamination Investigation, Johnson & Towers, Inc.'s Mount Laurel Facility, Mount Laurel, New Jersey, February 6, 1995.[1]

Report: Oil/Water Separator System - Contamination Investigation, CLP QA/QC Data Package, Volatiles & Semi-Volatiles, Property: Johnson & Towers, Inc.'s Mount Laurel Facility, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, February 6, 1995.[1]

Report: Oil/Water Separator System - Contamination Investigation, CLP QA/QC Data Package, Inorganics & PCBs, Property: Johnson & Towers, Inc.'s Mount Laurel Facility, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, February 6, 1995.[1]

Letter to Mr. Daniel Bello, BUST Case Manager, New Jersey Department of Environmental Protection (NJDEP), from Ms. Gloria G. Hunsberger, CPG, Project Manager, Powell-Harpstead, Inc., re: Groundwater Quality Status Report, Johnson & Towers Facility, 2021 Briggs Road, Mount Laurel Township, Burlington County, New Jersey, NJDEP Case No. 95-09-28-1347-25, UST Facility No. 0011576, February 26, 1997.[1]

Letter to Ms. Elaine DeWan, Supervisor, New Jersey Department of Environmental Protection, from Mr. Daniel L. Harpstead, P.E., Vice President/Director of Engineering and Ms. Sonya Y. Ward, P.G., Project Manager, Powell-Harpstead, Inc., re: Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, Case No. 94-10-28-1133-18; 95-09-28-1347-25, UST No. 0011576; TMS No. C94-2116, August 15, 1997.[1]

3.3 Work Plans

P. 300001 - 300265 Report: Proposed Remedial Action Plan, Johnson & Towers, Inc., Mt. Laurel, New Jersey, prepared by AGES (Applied Geotechnical and Environmental Service) Corp., February, 1987.

P. 300266 - 300324 Letter to Mr. Perry Katz, U.S. Environmental Protection Agency, Region 2, from Mr. Jim Ashworth, Environmental Consultant, Johnson & Towers, Inc., re: Johnson & Towers, Inc., Mount Laurel, NJ, November 14, 1989. (Attachment: Final Remedial Action Plan, Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, prepared by: Ashworth Environmental Services, November 1989).

P. 300325 - 300515 Report: Work Plan, Section F - Standard Operating Procedures, Johnson & Towers, Inc., prepared by Powell Environmental Services, Inc., December, 1992.

P. 300516 - 300676 Report: Field Operations Plan, Final Remedial Investigation, Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, NJ, prepared by Powell Environmental Services, Inc., December 3, 1992.

P. 300677 - 300857 Report: Field Operations Plan, Final Remedial Investigation, Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, NJ, prepared by Powell Environmental Services, Inc., December 3, 1992, Revised: March 18, 1993.

P. 300858 - 301093 Report: Field Operations Plan, Section F - Standard Operating Procedures, Johnson & Towers, Inc., prepared by Powell Environmental Services, Inc., December, 1992, Revised: March 18, 1993.

P. 301094 - 301382 Report: Field Operations Plan, Section F - Standard Operating Procedures, Johnson & Towers, Inc., prepared by Powell-Harpstead, Inc., December, 1992, Revised: March 18, 1993, Revised: December 4, 1997.

P. 301383 - 301725 Report: Field Operations Plan, Final Remedial Investigation, Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, NJ, prepared by Powell-Harpstead, Inc., December 4, 1997.

P. 301726 - 301857 Report: Site Specific, Health and Safety Plan, Additional Sampling for Feasibility Study, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, Revision 1, October 17, 2005.

P. 301858 - 301931 Report: Quality Assurance Project Plan (QAPP), Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study, Property: 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel Township, Burlington County, New Jersey, Revision 1, October 18, 2005.

P. 301932 - 301991 Report: Work Plan, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study, Property: 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, New Jersey, Revision 1, October 21, 2005.

P. 301992 - 302265 Report: Additional Standard Operating Procedures (SOPs), Property: 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, New Jersey, Revision 1, October 21, 2005.

P. 302266 - 302378 Letter to Ms. Grisell Diaz-Cotto, U.S. Environmental Protection Agency, Region 2, from Mr. Scott Smith, P.E., Project Manager and Ms. Gail K. Osborne, C.P.G., Area Manager, Powell-Harpstead, Inc., re: Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, NJ, May 8, 2006. (Attachment: Work Plan Revision No. 2, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study, Property: 2021 Briggs Road, Mt. Laurel, New Jersey, prepared by Powell-Harpstead, Inc., a Kleinfelder Company, prepared for Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, New Jersey, May 1, 2006).

3.4 Remedial Investigation Reports

P. 302379 - 302531 Report: Preliminary Draft Risk Assessment for the Johnson and Towers Site, Burlington County, New Jersey, prepared by Ebasco Services

Incorporated, prepared for U.S. Environmental Protection Agency, February, 1989.

P. 302532 - 302661 Report: Final Remedial Investigation, Volume I, Property: Johnson & Towers Facility, prepared by Powell Environmental Services., Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, May 17, 1994.

Report: Final Remedial Investigation, Volume II, Appendices, Property: Johnson & Towers Facility, prepared by Powell Environmental Services, Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, May 17, 1994.[1]

P. 302662 - 302671 Letter to Mr. James Haklar, U. S. Environmental Protection Agency, Region 2, from Mr. Richard L. Zambito, P.E., Project Director, Powell-Harpstead, Inc., re: Enclosed Interim Field Report for the Underground Storage Tank Removal, Johnson & Towers, Inc., Mount Laurel, New Jersey, December 13, 1995.

P. 302672 - 302723 Report: Underground Storage Tank, Remedial Investigation Report, Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, prepared by Powell-Harpstead, Inc., 2615 River Road, Unit 2, Cinnaminson, New Jersey, March 27, 1996.

P. 302724 - 302851 Report: Final Remedial Investigation, Volume I, Property: Johnson & Towers Facility, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, April 28, 1997, Revised Issue.

Report: Final Remedial Investigation, Volume II, Appendices, Property: Johnson & Towers Facility, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, NJ, April 28, 1997. [1]

P. 302852 - 302954 Report: Final Remedial Investigation Report, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, December 15, 1998.

P. 302955 - 302975 Report: Final Remedial Investigation Report, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-

Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, December 15, 1998, Revised July 7, 1999.

P. 302976 - 303026 Report: Final Groundwater Remedial Investigation Report, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, November 15, 1999.

Report: Final Groundwater Remedial Investigation Report, Appendix H, Volume II, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, November 15, 1999.[1]

Report: Final Groundwater Remedial Investigation Report, Appendix H, Volume III, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, November 15, 1999.[1]

Report: Final Groundwater Remedial Investigation Report, Appendix H, Volume IV, Property: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Powell-Harpstead, Inc., prepared for Johnson & Towers, Inc., Mount Laurel, New Jersey, November 15, 1999.[1]

Report: Appendix I, Volume 1, Test Pit Soil Analytical Reports, Test Pit Water Analytical Reports, Soil Analytical Reports, prepared by Powell-Harpstead, Inc., undated.[1]

Report: Appendix I, Volume 2, Test Pit Soil CLP Data Package, prepared by Powell-Harpstead, Inc., undated.[1]

Report: Appendix I, Volume 3, Test Pit Soil CLP Data Package (cont'd), prepared by Powell-Harpstead, Inc., undated.[1]

Report: Appendix I, Volume 4, Test Pit Water CLP Data Package, prepared by Powell-Harpstead, Inc., undated.[1]

Report: Appendix I, Volume 5, Soil Boring Soil CLP Data Package, prepared by Powell-Harpstead, Inc., undated. [1]

Report: Appendix I, Volume 6, Soil Boring Soil CLP Data Package (cont'd), prepared by Powell-Harpstead, Inc., undated. [1]

P. 303027 - 303142 Report: Human Health Risk Assessment, Johnson & Towers, Mt. Laurel, NJ, December 7, 2004.

P. 303143 - 303559 Report: Final Remedial Investigation Report Addendum, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study, Property: 2021 Briggs Road, Mount Laurel, New Jersey, prepared by Kleinfelder, prepared for Johnson & Towers, Inc., Mt. Laurel Township, Burlington County, New Jersey, September 4, 2007.

3.5 Correspondence

P. 303560 - 303644 Letter to Mr. Perry Katz, Environmental Scientist, Site Compliance Branch, U.S. Environmental Protection Agency, Region 2, from Mr. William H. Fleming, Jr., P.E., Senior Vice President, Speitel Associates, re: Johnson and Towers Work Plan, Response to USEPA Review Document, September 4, 1986, October 3, 1986.

P. 303645 - 303658 Letter to Mr. Max J. Sandler, Greylag Technical Services Inc., from Mr. John V. Czapor, Chief, Site Compliance Branch, U.S. Environmental Protection Agency, Region 2, re: Proposed Remedial Action Plan (2/87), Johnson and Towers Site, February 12, 1988.

P. 303659 - 303661 Letter to Mr. Walter Johnson, III, Vice President and General Manager, Johnson & Towers, Inc., from Ms. Janet Feldstein, Chief, Central New Jersey Compliance Section, U.S. Environmental Protection Agency, Region 2, re: Johnson & Towers Site, November 21, 1990.

P. 303662 - 303670 Letter to Mr. Walter Johnson, III, Vice President/ General Manager, Johnson & Towers, Inc., from Mr. Raymond Basso, Chief, New Jersey Superfund Branch II, Emergency and Remedial Response Division, U.S. Environmental Protection Agency, Region 2, re:

Review of November 1989 Final Remedial Action Plan (FRAP), Johnson & Towers Site, April 18, 1991.

P. 303671 - 303683 - Letter to Mr. Walter Johnson, III, Vice President/ General Manager, Johnson & Towers, Inc., from Mr. Raymond Basso, Chief, New Jersey Superfund Branch II, Emergency and Remedial Response Division, U.S. Environmental Protection Agency, Region 2, re: Follow-up to Correspondence of April 18, 1991, December 3, 1991.

P. 303684 - 303689 - Letter to Mr. Walter Johnson, III, Vice President/ General Manager, Johnson & Towers, Inc., from Mr. James S. Haklar, P.E., Remedial Project Manager, New Jersey Superfund Branch II, Emergency and Remedial Response Division, U.S. Environmental Protection Agency, Region 2, re: Johnson & Towers Site, Groundwater Sampling Locations and Parameters, March 24, 1992.

P. 303690 - 303703 - Letter to Mr. Walter Johnson, III, Vice President/ General Manager, Johnson & Towers, Inc., from Mr. James S. Haklar, P.E., Remedial Project Manager, New Jersey Superfund Branch II, Emergency and Remedial Response Division, U.S. Environmental Protection Agency, Region 2, re: Follow-up to October 22, 1992 Conference Call, October 30, 1992.

P. 303704 - 303719 - Letter to Mr. James Haklar, Project Manager, Region II, U.S. Environmental Protection Agency, from Mr. Richard L. Zambito, P.E., Project Director, Powell-Harpstead, Inc., re: Wastewater Disposal, Johnson & Towers, Inc., Mount Laurel, New Jersey, February 29, 1996.

P. 303720 - 303720 - Letter to Mr. Daniel Bello, Acting Supervisor, Bureau of Underground Storage Tanks, from Mr. Daniel L. Harpstead, P.E., Director of Engineering/Vice-President, Powell-Harpstead, Inc., re: Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, Case No: 94-10-28-1133-18; 95-09-28-1347-25, UST No: 0011576; TMS No. C94-2116, August 15, 1996.

P. 303721 - 303721 - Letter to Mr. Dan Bello, Case Manager, Bureau of Underground Storage Tanks, New Jersey Department of Environmental Protection, from Mr. James S. Haklar, P.E., Acting Chief, Central New Jersey Remediation Section, U.S. Environmental Protection Agency,

Region 2, re: Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, December 10, 1996.

P. 303722 - 303725 Letter to Mr. Peter Mannino, U.S. Environmental Protection Agency, Region 2, from Mr. Sonya Y. Ward, C.P.G., Hydrogeologist, and Mr. Daniel L. Harpstead, P.E., Director of Engineering/Vice President, Powell-Harpstead, Inc., re: Johnson and Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, Case No: 94-10-28-1133-18; 95-09-28-1347-25, UST No: 0011576; TMS No. C94-2116, March 20, 1998.

P. 303726 - 303727 Letter to Mr. Peter Mannino, U.S. Environmental Protection Agency, Region 2, from Mr. Sonya Y. Ward, C.P.G., Project Manager, Powell-Harpstead, Inc., re: Johnson and Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, July 7, 1999.

P. 303728 - 303731 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Carole Petersen, Chief, New Jersey Remediation Branch, U.S. Environmental Protection Agency, Region 2, re: Review of Final Groundwater Remedial Investigation Report, Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), March 17, 2000.

P. 303732 - 303733 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Human Health Risk Assessment, Johnson & Towers, Mount Laurel, New Jersey, September 19, 2000.

P. 303734 - 303735 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Human Health Risk Assessment (Revised), Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), December 16, 2004.

P. 303736 - 303737 Letter to Ms. Grisell Diaz-Cotto, U.S. Environmental Protection Agency, Region 2, from Mr. Scott Smith, P.E., Project Manager, Powell-

Harpstead, Inc., re: Johnson & Towers, Inc., 2021 Briggs Road, Mount Laurel, Burlington County, New Jersey, USEPA's Human Health Risk Assessment dated December 7, 2004, Case No. 94-10-28-1133-18; 95-09-28-1347-25, UST No. 0011576; TMS No. C94-2116, April 13, 2005.

P. 303738 - 303746 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Additional Soil and Groundwater Remedial Investigation in Preparation for a Feasibility Study - July 20, 2005 Work Plan, Health and Safety Plan, Quality Assurance Project Plan, Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), September 19, 2005.

P. 303747 - 303755 Letter to Ms. Grisell Diaz-Cotto, U.S. Environmental Protection Agency, Region 2, from Mr. Scott Smith, P.E., Project Manager, Powell-Harpstead, Inc., re: Johnson & Towers, Inc., 2021 Briggs Road, Mt. Laurel, Burlington County, NJ, Case Nos. 94-10-28-1133-18; 95-09-28-1347-25, UST No. 0011576; TMS No. C94-2116, October 21, 2005.

P. 303756 - 303758 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Revision 1, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study - October 21, 2005 Work Plan, Health and Safety Plan, Quality Assurance Project Plan, Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), January 11, 2006.

P. 303759 - 303759 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Revision 2, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study - May 1, 2006 Work Plan, Health and Safety Plan, Quality Assurance Project

Plan, Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), June 2, 2006.

P. 303760 - 303760 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Ms. Grisell V. Diaz-Cotto, Remedial Project Manager, U.S. Environmental Protection Agency, Region 2, re: Revision 2, Additional Groundwater Remedial Investigation in Preparation for a Feasibility Study - May 1, 2006 Work Plan, Health and Safety Plan, Quality Assurance Project Plan, Johnson & Towers, Inc. Site, Mount Laurel, New Jersey, Administrative Order on Consent (Index No. II-RCRA-7003-60101), June 3, 2006.

P. 303761 - 303768 Letter to Mr. Walter F. Johnson, III, Vice President/General Manager, Johnson & Towers, Inc., from Mr. John Prince, Chief, Central New Jersey Remediation Section, U.S. Environmental Protection Agency, Region 2, re: Administrative Order of Consent II-RCRA-7003-60101, March 20, 2008.

7.0 ENFORCEMENT

7.3 Administrative Orders

P. 700001 - 700009 Administrative Order on Consent, United States Environmental Protection Agency, Index No. II-RCRA-3013-30101, In the Matter of Johnson & Towers, Inc. (Mt. Laurel, New Jersey) Proceeding under §3013 of the Resource Conservation and Recovery Act (42 U.S.C. §6934), December 30, 1983.

P. 700010 - 700031 Letter to Margaret Thompson, Esq., Office of Regional Counsel, U.S. Environmental Protection Agency, Region 2, from Ms. Renate A. Coombs, Shanley & Fisher, re: Johnson & Towers Administrative Order on Consent II-RCRA-7003-60101, December 2, 1985. (Attachment: Administrative Order on Consent, United States Environmental Protection Agency, Region II, In the Matter of Johnson & Towers, Inc. (Mt. Laurel, New Jersey), Respondent. Proceeding under Section 7003(a) of the Resource Conservation and Recovery Act, 42 U.S.C. §6973(a), December 23, 1985.)

7.8 Correspondence

P. 700032 - 700033 Letter to Mr. Peter M. Johnson, President, Johnson & Towers, Inc., from Mr. Christopher J. Daggett, Regional Administrator, U.S. Environmental Protection Agency, Region 2, re: In the Matter of Johnson & Towers, Inc. EPA Administrative Order Index No. II-RCRA-7003-60101, April 27, 1987.

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[1] This document is available for review at the Superfund Records Center, U.S. EPA Region 2, 290 Broadway, New York, New York.

JOHNSON & TOWERS SITE
ADMINISTRATIVE RECORD FILE UPDATE
INDEX OF DOCUMENTS

3.0 REMEDIAL INVESTIGATION

3.5 Correspondence

P. 303769 - 303771 Memorandum to Ms. Grisell Diaz-Cotto, Remedial Project Manager, ERRD/NJRB, U.S. Environmental Protection Agency, Region 2, from Ms. Chloe Metz, Risk Assessor, ERRD/PSB/TST, U.S. Environmental Protection Agency, Region 2, re: Johnson & Towers Residential Exposure to Soil: Supplemental Risk Evaluation, September 25, 2008.

APPENDIX IV

STATE LETTER

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JON S. CORZINE
Governor

LISA P. JACKSON
Commissioner

SEP 29 2008

Mr. George Pavlou, Acting Director
Emergency and Remedial Response Division
U.S. Environmental Protection Agency
Region II
290 Broadway
New York, NY 10007-1866

Re: Johnson & Towers Inc. Site
Record of Decision

Dear Mr. Pavlou:

The New Jersey Department of Environmental Protection (DEP) completed its review of the "Record of Decision, Johnson & Towers Inc. Site, Soil and Groundwater, Mount Laurel Township, Burlington County, New Jersey" prepared by the U.S. Environmental Protection Agency (EPA) Region II in September 2008 and concurs with its selected remedy.

The selected final remedy for this site is a no further action remedy for soils and long-term monitoring for groundwater.

The remedy for the groundwater consists of a long-term groundwater sampling and analysis program to monitor the contaminant concentrations in the groundwater at the site and to assess the migration and attenuation of these contaminants in the groundwater over time. A Classification Exception Area will be established at the site as an institutional control to document groundwater conditions.

DEP appreciates the opportunity to participate in the decision making process to select an appropriate remedy and is looking forward to future cooperation with EPA in reaching construction completion at this site.

If you have any questions, please call me at 609-633-1408.

Sincerely,

Len Romino, Assistant Director
Responsible Party Remediation Element
Site Remediation Program

C: Irene Kropp, Assistant Commissioner, Site Remediation Program, DEP
Carole Petersen, Chief, New Jersey Remediation Branch, EPA Region II

APPENDIX V

RESPONSIVENESS SUMMARY

APPENDIX V

RESPONSIVENESS SUMMARY
Johnson and Towers, Inc., Site
Mount Laurel Township, New Jersey

INTRODUCTION

This Responsiveness Summary provides a summary of the public's comments and concerns regarding the Proposed Plan for the Johnson and Towers site, and EPA's responses to those comments. At the time of the public comment period, EPA proposed a preferred approach for addressing soils and groundwater. All comments summarized in this document have been considered in EPA's final decision for the selection of the remedy for the site.

This Responsiveness Summary is divided into the following sections:

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS: This section provides the history of community involvement and interests regarding the Johnson & Towers site.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS AND RESPONSES: This section contains summaries of oral comments received by EPA at the public meeting and EPA's responses to these comments.

The last section of this Responsiveness Summary includes attachments, which document public participation in the remedy selection process for this site. They are as follows:

Attachment A contains the Proposed Plan that was distributed to the public for review ands comment;

Attachment B contains the public notice that appeared in the Burlington County Times; and

Attachment C contains the transcripts of the public meeting.

EPA received no written comments during the public comment period.

I. BACKGROUND ON COMMUNITY INVOLVEMENT AND CONCERNS

On July 30, 2008, EPA released the Proposed Plan and supporting documentation for the no action for soils and long-term monitoring for groundwater to the public for comment. EPA made these documents available to the public in the Administrative Record repositories maintained at the EPA Region II office (290 Broadway, New York, New York) and the Mount Laurel Library (100 Walt Whitman Avenue, Mount Laurel, New Jersey 08054). EPA published a notice of availability involving these documents in the Burlington County Times newspaper, and opened a public comment period on the documents from July 30, 2008 to August 30, 2008. On August 19, 2008, EPA held a public meeting at the Mount Laurel Library to inform local officials and interested residents about the Superfund process, to present the preferred remedial alternative for the site, solicit oral comment, and respond to any questions.

The oral and written comments received from the public and EPA's responses can be found in the next sections of this summary. All recorded comments for the Johnson and Towers site's Proposed Plan have been included as an attachment to this Responsiveness Summary. For readability and clarity, EPA grouped, where possible, similar comments into one general comment; therefore, a single response may answer several comments.

II. COMPREHENSIVE SUMMARY OF MAJOR QUESTIONS, COMMENTS, CONCERNS, AND RESPONSES

PART 1: Verbal Comments

A public meeting was held on August 19, 2008, at 7:00 P.M. at the Mount Laurel Library, 100 Walt Whitman Avenue, Mount Laurel, New Jersey. Following a brief presentation of he investigation findings, EPA presented the Proposed plan for the site, received comments from meeting participants, and responded to questions regarding the remedy proposal under consideration.

Comment: A resident living about a mile from the site, and with a private well not used for drinking water, asked if any of the ground outside of the site area had been tested.

Response: Groundwater and soil sampling took place at the facility and it was found that the problems arising from its operation were localized to within the confines of the facility. The investigation did not need to go beyond the boundaries of the facility.

Comment: A resident asked if the 600 tons of soil that were removed from the site in earlier removal actions may not have been enough, and that arsenic-contaminated soils may have been left in place.

Response: Johnson and Towers never handled arsenic, and elevated arsenic concentrations were not found in the excavated leach field area. Subsequent soil sampling has not found an area of elevated arsenic in soils. The combination of groundwater contaminants that had been released by the company and local soil conditions may have made the arsenic present in soils more soluble. This area of local solubility has not translated into greater mobility for arsenic in groundwater, as evidenced by the limited travel distance of the dissolved arsenic.

Comment: A resident asked if the Department of Transportation's plans for building an interchange at U.S. Route 295 and Route 38, including an overpass at Briggs Road, would to create any problems at the site.

Response: It should not create new conditions that would change EPA's conclusions about the site.

Comment: A Township official said that a large amount of soil, with naturally occurring arsenic, was removed not far from the site, so finding arsenic in the groundwater was perhaps not surprising. The official also asked if there was something that the Township's Emergency Management officials needed to know about the site, if there were an incident at that location.

Response: No, no special measures were necessary at the facility based upon the findings of EPA's environmental studies.

Comment: The same Township official asked if there is any danger to wildlife in the area due to groundwater contamination.

Response: No. EPA has not found any groundwater-surface water interaction in the area where contaminated groundwater would be available at the ground surface. The depth to the top of the groundwater is approximately eight to 12 feet below the ground surface in the area of MW-01 and MW-09.

Comment: The same Township official asked if the groundwater will continued to be monitored.

Response: Yes, EPA will require Johnson and Towers to do so, using EPA's sampling methods and reporting the results to EPA, for as long as the arsenic persists above acceptable levels.

PART 2: Written Comments

No written comments were received from the public during the public comment period.

ATTACHMENT A

PROPOSED PLAN

Superfund Program
Proposed Plan

U.S. Environmental Protection Agency, Region II

Johnson & Towers, Inc.
Soil and Groundwater
August 2008

EPA ANNOUNCES PROPOSED PLAN

This Proposed Plan identifies the preferred alternative for addressing soil and groundwater at the Johnson and Towers site, and provides the rationale for that preference. The Johnson and Towers site is not on the National Priorities List of Superfund sites, however, EPA took the lead on addressing this site in the early 1980s. Johnson and Towers, Inc. still operates at the facility and has worked, at EPA's direction, to investigate and remediate contamination at the facility. Wastewater discharge from Johnson and Towers operations to an on-site subsurface leach field resulted in soil and groundwater contamination. Johnson and Towers, Inc. has taken a number of actions, including excavating and removing the leach field. At this time, groundwater at the site contains residual arsenic that exceeds State drinking water standards. However, the arsenic concentrations have remained constant over the last eight years, do not appear to be migrating downgradient, and are limited to a specific area. Therefore, EPA is recommending no further action for soil and long-term monitoring of groundwater along with a well installation restriction that will ensure that wells are not installed in the future. The monitoring and well restriction would be in place as long as groundwater concentrations continue to exceed State standards.

Dates to remember.
MARK YOUR CALENDAR

PUBLIC COMMENT PERIOD:
July 30 – August 29, 2008
U.S. EPA will accept written comments on the Proposed Plan during the public comment period.

PUBLIC MEETING:
August 19, 2008 from 7:00 pm to 9:00 pm
U.S. EPA will hold a public meeting to explain the Proposed Plan and all of the alternatives presented in the Feasibility Study. Oral and written comments will also be accepted at the meeting. The meeting will be held at the Mount Laurel Township Municipal Courtroom, 100 Mount Laurel Road, Mt. Laurel, New Jersey.

For more information, see the Administrative Record at the following locations:

U.S. EPA Records Center, Region II
290 Broadway, 18th Floor
New York, New York 10007-1866
(212-637-4308)
Hours: Monday-Friday – 9AM to 5 PM

Mount Laurel Library
100 Walt Whitman Ave.
Mount Laurel, NJ 08054
(856-234-7319)

EPA's assessment of the soil at the facility has not identified any areas of soil contamination that would pose an unacceptable current or future risk to human health or the environment; therefore, EPA is recommending no action for the soils.

This proposed plan summarizes the data considered in making this no action recommendation. This document is issued by EPA, the lead agency for site activities. EPA, in consultation with NJDEP, the support agency for site activities, will select the final remedy for the site after reviewing and considering all information submitted during a 30-day public comment period. EPA, in consultation with NJDEP, may modify the preferred alternative or select another response action presented in this Proposed Plan based on new information or public comments. Therefore, the public is encouraged to review and comment on all the information presented in this Proposed Plan.

EPA is issuing this Proposed Plan as part of its community relations program under Section 117(a) of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA, or Superfund). This Proposed Plan summarizes information that can be found in greater detail in several reports, included in the Administrative Record, which collectively comprise a Remedial Investigation for the site. EPA and NJDEP encourage the public to review these documents to gain a more comprehensive understanding of the site and Superfund activities that have been conducted at the site.

SITE DESCRIPTION

The Johnson and Towers site is located in Mount Laurel Township, in Burlington County, New Jersey. The site is bounded to the north by Route 38, to the east by Briggs Road, and to the south and west by fields and wooded areas. (See Figure 1.) The site, which covers 7.5 acres, is an active facility of the Johnson and Towers company, and is surrounded by a fence on three sides. The unfenced side of the facility faces Briggs Road. The site includes a 54,000-square foot building for offices and the shop where engine repair and rebuilding activities occur, parking lots, driveways, and lawns. Much of the area surrounding the on-site building is used for vehicle parking. Johnson and Towers is in an area zoned commercial/industrial and the nearby properties are primarily commercial in nature. There are residential developments within approximately one mile southeast of the site that are separated from Johnson and Towers by open fields and wooded areas.

State records indicate that no residents are currently drinking groundwater within one mile downgradient of the site. There are no potable wells at the site; the facility is connected to public water.

The topography of the site is generally flat, ranging from 35 to 43 feet above mean sea level, and there is a drainage swale bounding the rear of the property, along the fence, to the southwest. The drainage swale flows into a tributary of Parker's Creek, which ultimately discharges into the Delaware River. The direction of groundwater flow is to the southeast and is seven to 13 feet below ground surface. The shallow aquifer is the unconfined Englishtown formation. It is separated from the Raritan-Magothy formations (the major supply aquifer for New Jersey) by the Woodbury Clay and the Merchantville formations, which act as an aquitard.

SITE HISTORY

Johnson and Towers began remanufacturing and rebuilding diesel engines at this location in 1976. The facility primarily generated waste containing spent solvents, acids, caustics, and alcohols. Industrial wastewater containing

some of these products was discharged into the shop floor drain system. Initially, the facility eliminated its wastewater by directing it into a series of concrete tanks, one of which was perforated to allow for percolation into the subsurface. In 1978, the wastewater disposal system was modified and expanded so that wastewater was rerouted to an oil/water separator prior to discharge in a shallow leach field of roughly 50 square feet.

The leach field was reportedly constructed as a shallow percolation field. The system consisted of a three-foot excavation in soils with a high clay content. The excavation was backfilled with two feet of crushed stone covered with one foot of soil. Four-inch perforated PVC distribution pipes were placed at the midpoint of the crushed stone layer.

The leach field became overloaded in a relatively short period due to the volume of wastewater and the shallowness of the water table. Occasionally, an industrial wastewater hauling company was used to alleviate the problem. The leach field became overloaded and inoperable in the latter part of 1982.

In 1982, Johnson and Towers discontinued use of many cleaning products that were subsequently found in groundwater and altered the product-handling methods for others, so that it could be connected to the public sewer system. In 1983, the company connected its wastewater and sanitary systems to the Mount Laurel sewer system. Connection to the municipal sewer required modification and limited use of certain industrial products at the facilities. The composition of the wastewater entering the shop area floor drain system was also upgraded and carefully controlled.

After connection to the public sewer system, Johnson and Towers abandoned the leach field and removed the concrete tanks. Six-hundred tons of soil were removed from the seepage tank area. Clean soil was used as backfill. A 500-gallon fiberglass holding tank was placed in the excavation.

In 1983, EPA issued an Administrative Order of Consent (AOC) to investigate the nature and extent of the contamination caused by the wastewater discharge (from the servicing and manufacturing operations) to the subsurface seepage pit system and leach field.

In February 1985, Johnson and Towers submitted a report which showed contamination of the leach field, in addition to the presence of some contaminants in the groundwater monitoring wells downgradient from the leach field. Because these contaminants were identical to those detected in the leach field, the investigation confirmed groundwater contamination attributable to the facility. Therefore, in December of that year, a second AOC was issued to develop and implement a remedial plan to determine the full extent of other on-site and off-site contamination, and to formulate remedial steps to prevent further migration of hazardous wastes from the facility.

After issuance of the second AOC for the site, Johnson and Towers undertook a series of soil and groundwater investigations to characterize the full extent of the site problems. During the course of these investigations, additional underground tanks and piping were discovered and removed. The last of these subsequent removal actions was completed in 1995.

Field investigations continued, with the installation of groundwater monitoring wells and collection of soil samples, until 1999, at which point EPA concluded it had enough information to begin a human health risk assessment for the site.

In 2000, Johnson and Towers prepared a Remedial Investigation report, which

summarized the remaining problems at the site, and EPA prepared a preliminary Human Health Risk Assessment (HHRA) for the facility, which it provided to Johnson and Towers. In preparing the HHRA, EPA determined that additional data were needed in order to complete the HHRA. EPA then directed Johnson and Towers to collect these data, primarily with regard to the residual arsenic contamination found in groundwater at the site (arsenic had not been an original contaminant of concern at the site).

With the collection of additional data, EPA completed the HHRA in 2004. In 2006, a last sampling event was performed at the site. This last round of sampling was needed prior to selecting a remedy for the site, because some of the data that EPA would otherwise need to rely on to select a remedy was over five years old. Thus, this last round of sampling was used to confirm that conditions were either unchanged or improving throughout the whole site.

In March of 2008, after reviewing these multiple submittals throughout the years, EPA concluded that these investigations effectively comprised a Remedial Investigation under Superfund, and that it was satisfied with the completeness of the investigation.

SITE CHARACTERISTICS

Volatile Organic Compounds (VOCs) in Soils

The initial problems identified at the site were related to volatile organic compounds (VOCs), including the solvents methylene chloride and 2-butanone found in soils in the area of the underground storage tank and leach field. Initial sampling in 1986, collected from soils around the underground storage tank, identified soil contamination of methylene chloride as high as 71,000 parts per million (71,000 ppm).

In 1999, several years after completion of the last removal action, sampling results were compared to a set of screening values, which in the case of VOCs in soils were EPA's Industrial Soil Risk-Based Concentrations (RBCs). RBCs are used by EPA for chemical screening during remedial investigations and as part of a Human Health Risk Assessment, to identify contaminants of potential concern. The soil samples that were screened were collected at depths ranging from surface soils (the first six inches) to as deep as ten feet. No VOCs in soils exceeded the RBCs.

VOCs in Groundwater

In 1986, the maximum concentration of TCE in groundwater samples was 82.7 parts per billion (82.7 ppb). The tap water RBC for this compound was 1.6 ppb, and the New Jersey Groundwater Quality Standard is 1 ppb.

Back in 1989, methylene chloride was chosen as an indicator chemical because it was a potential carcinogen, in addition to being the compound most frequently detected in groundwater samples, at a maximum concentration of 127 ppb. The tap water RBC for this compound was 4.1 ppb, and the New Jersey Groundwater Quality Standard is 3 ppb.

Since 1999, no VOCs have been detected at concentrations that exceeded the RBCs or Groundwater Quality Standards.

Arsenic in Soils

Beginning in approximately 1988, arsenic was found above health-based screening values in soils associated with the areas of VOC contamination at the site. There is no evidence that arsenic was used in any of the business operations at the site. Further studies were performed to attempt to identify the source of the arsenic.

1997 Results

Concentrations ranged between 2.3 and 34.2. ppm, with an average concentration of about 7.8 ppm, from under the former underground storage tank (UST) and leachate field. The commercial RBC for arsenic is 3.8 ppm.

1998 Results

Concentrations ranged between non-detect and 9.8 ppm, with an average of 4.4 ppm for the leachate field. For test borings under the former UST, concentrations ranged from 3.7 to 9.6 ppm, averaging 6.0 ppm.

1999 Results

Concentrations from locations approximately 400 feet downgradient of the former UST area ranged between 9.5 and 34.1 ppm at various depths.

Arsenic in groundwater

1999 results

High levels of arsenic were found in groundwater sampled in two wells at 258 ppb and 318 ppb. The tap water RBC for arsenic is 0.045 ppb, and the New Jersey Groundwater Quality Standard is 3 ppb.

2006 results

Between August 31 and September 5, 2006, seven groundwater monitoring wells and one piezometer were sampled. Groundwater samples analyzed for total metals indicated concentrations of arsenic of 270 ppb as the highest concentration on site, at well MW-01 (Please refer to Figure 1). Only one other well (MW-09) had an arsenic concentration in exceedence of the New Jersey Ground Water Quality Criterion of 3 ppb.

Arsenic in the environment is present in one of several different chemical forms or "species." Determining which "species" of arsenic is present can sometimes provide clues to its origin, and this 2006 sampling event tested several site groundwater samples in this way. Speciated arsenic indicated concentrations of arsenic of 225 ppb for Arsenic III and 160 ppb for Arsenic V. Arsenic present in water is primarily in the form of inorganic arsenic (III and V); arsenic (III) is oxidized during water treatment to arsenic (V). However, the site-specific data did not help clarify the source of the arsenic. It has been suggested that arsenic present in soils in the area have been influenced by local conditions that make it more soluble, resulting in the localized elevated concentrations in groundwater. In addition, traces of pesticides have been detected in both groundwater and in soils of the site; these suggest that a previous land use, such as agriculture, can also account for arsenic in soil in the area. No other source of the arsenic has been identified.

Other contaminants in groundwater - 2006 results

Aluminum, iron and manganese, which are natural components of groundwater and are not likely associated with site activities, exceed the New Jersey Groundwater Quality Standards in monitoring wells MW-1, 2, 3, 5, 8 and 9. In general, concentrations of contaminants of concern (COCs) in groundwater (aluminum, arsenic, chromium and iron) have gone down or remained constant since the previous round of data was collected in 1999.

ENFORCEMENT

EPA has identify Johnson and Towers as the Potentially Responsible Party, and have them

under order to investigate and resolve all issues related to wastewater discharges on this site, and to conduct cleanup, as appropriate.

SCOPE AND ROLE OF THE ACTION

With this action, EPA is addressing soil and groundwater as the final remedy planned for the site.

SUMMARY OF SITE RISKS

As part of the Remedial Investigation, EPA conducted a baseline risk assessment to estimate the current and future effects of contaminants on human health. A baseline risk assessment is an analysis of the potential adverse human health of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land and groundwater uses.

Due to the lack of usable terrestrial habitat for ecological receptors at the site, risks to ecological receptors would be low. Therefore, a Screening Level Ecological Risk Assessment (SLERA) was not performed and ecologically based screening criteria are not presented and will not be utilized to assist in the interpretation of the nature and extent of soil and groundwater contamination at the site.

The cancer risk and non-cancer health hazard estimates are based on current reasonable maximum exposure scenarios and were developed by taking into account various health protective estimates about the frequency and duration of an individual's exposure to chemicals selected as contaminants of potential concern (COPCs), as well as the toxicity of these contaminants. (Please see the text box on the following page for an explanation of risk assessment terms.)

The site is currently zoned commercial/ industrial and the surrounding properties are primarily commercial in nature. Future land use is expected to remain the same. The baseline risk assessment evaluated health effects that could result from exposure to contaminated groundwater and soil by current and future site workers and trespassers, as well as hypothetical future construction workers. Hypothetical ingestion of groundwater by off-site residents (adult and child) was also evaluated.

The Human Health Risk Assessment (HHRA) concluded that the cancer risks and non-cancer health hazards from constituents detected in the soil were within EPA's target risk range for carcinogens and below the Hazard Index (HI) of 1 for non-carcinogens for all populations evaluated under both current and future use scenarios. In the evaluation of groundwater, cancer risks and non-cancer health hazards from exposure to some metals exceeded EPA's thresholds from hypothetical future use of groundwater as a drinking water source. The excess lifetime cancer risk is 4×10^{-3} and the HI is 50 for the future adult resident, and the excess lifetime cancer risk is 3×10^{-3} and the HI is 100 for the future child resident. Arsenic is the primary contaminant of concern.

Even with these exceedences of EPA's risk range for groundwater, several years of monitoring data show that the groundwater contamination is localized and does not appear to be migrating downgradient. Additionally, all nearby residents and businesses are served by public water. A Classification Exception Area restriction would ensure that wells are not installed in the future so long as groundwater concentrations continue to exceed State standards. Therefore, no remedial action is warranted. However, a regular monitoring plan would be established to ensure that site conditions remain the same. A complete discussion of the risks and hazards can be

found in the *Human Health Risk Assessment* in the site repository.

CONCLUSION

Based on the data collected and reported from 1984 to 2007 and the conclusion of the HHRA, the soil does not need to be remediated. In addition, the sampling showed that the residual contamination in groundwater is localized and does not appear to be migrating downgradient. Therefore, no further remedial action is necessary for soil or groundwater.

However, because levels of arsenic persist in two wells, under this proposal, EPA would require ongoing monitoring while the contamination persists, in addition to the establishment of a Classification Exception Area for the area of groundwater contamination.

State/Support Agency Acceptance

The State of New Jersey concurs with this Proposed Plan.

COMMUNITY PARTICIPATION

EPA encourages the public to gain a more comprehensive understanding of the site and the Superfund activities that have been conducted there.

The dates for the public comment period, the date, location and time of the public meeting, and the locations of the Administrative Record files, are provided on the front page of this proposed plan. EPA Region 2 has designated a public liaison as a point-of-contact for the community concerns and questions about the federal Superfund program in New York, New Jersey, Puerto Rico, and the U.S. Virgin Islands. To support this effort, the Agency has established a 24-hour, toll-free number that the public can call to request information, express their concerns, or register complaints about Superfund.

For further information on the Johnson & Towers site, please contact:

Grisell V. Díaz-Cotto Remedial Project Manager (212) 637-4430	Wanda Ayala Community Relations Coordinator (212) 637-3676

U.S. EPA
290 Broadway 19th Floor
New York, New York 10007-1866

The public liaison for EPA's Region 2 is:

George H. Zachos
Regional Public Liaison
Toll-free (888) 283-7626
(732) 321-6621

U.S. EPA Region 2
2890 Woodbridge Avenue, MS-211
Edison, New Jersey 08837-3679

What is Risk and How is it Calculated?

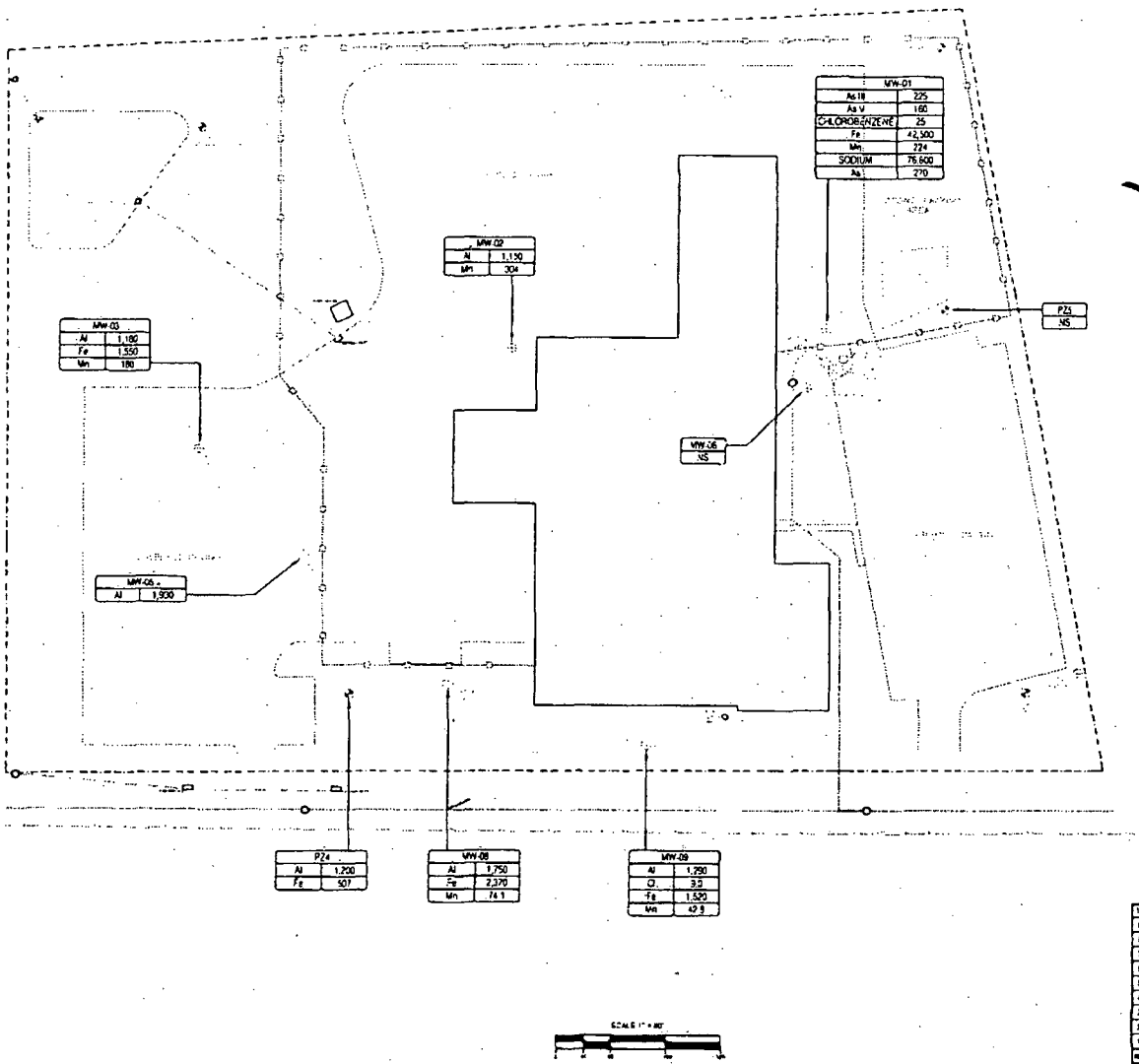
A Superfund baseline human health risk assessment is an analysis of the potential adverse health effects caused by hazardous substance releases from a site in the absence of any actions to control or mitigate these under current- and future-land uses. A four-step process is utilized for assessing site-related human health risks for reasonable maximum exposure scenarios.

Hazard Identification: In this step, the chemicals of potential concern (COPCs) at the site in various media (i.e., soil, groundwater, surface water, and air) are identified based on such factors as toxicity, frequency of occurrence, and fate and transport of the contaminants in the environment, concentrations of the contaminants in specific media, mobility, persistence, and bioaccumulation.

Exposure Assessment: In this step, the different exposure pathways through which people might be exposed to the contaminants in air, water, soil, etc. identified in the previous step are evaluated. Examples of exposure pathways include incidental ingestion of and dermal contact with contaminated soil and ingestion of and dermal contact with contaminated groundwater. Factors relating to the exposure assessment include, but are not limited to, the concentrations in specific media that people might be exposed to and the frequency and duration of that exposure. Using these factors, a "reasonable maximum exposure" scenario, which portrays the highest level of human exposure that could reasonably be expected to occur, is calculated.

Toxicity Assessment: In this step, the types of adverse health effects associated with chemical exposures, and the relationship between magnitude of exposure and severity of adverse effects are determined. Potential health effects are chemical-specific and may include the risk of developing cancer over a lifetime or other non-cancer health hazards, such as changes in the normal functions of organs within the body (e.g., changes in the effectiveness of the immune system). Some chemicals are capable of causing both cancer and non-cancer health hazards.

Risk Characterization: This step summarizes and combines outputs of the exposure and toxicity assessments to provide a quantitative assessment of site risks for all COPCs. Exposures are evaluated based on the potential risk of developing cancer and the potential for non-cancer health hazards. The likelihood of an individual developing cancer is expressed as a probability. For example, a 10-4 cancer risk means a "one-in-ten-thousand excess cancer risk"; or one additional cancer may be seen in a population of 10,000 people as a result of exposure to site contaminants under the conditions identified in the Exposure Assessment. Current Superfund regulations for exposures identify the range for determining whether remedial action is necessary as an individual excess lifetime cancer risk of 10-4 to 10-6, corresponding to a one-in-ten-thousand to a one-in-a-million excess cancer risk. For non-cancer health effects, a "hazard index" (HI) is calculated. The key concept for a non-cancer HI is that a threshold (measured as an HI of less than or equal to 1) exists below which non-cancer health hazards are not expected to occur. The goal of protection is 10-6 for cancer risk and an HI of 1 for a non-cancer health hazard. Chemicals that exceed a 10-4 cancer risk or an HI of 1 are typically those that will require remedial action at the site and are referred to as Chemicals of Concern or COCs in the final remedial decision or Record of Decision.


MW-01
As III 225
As V 160
CHLOROBENZENE 35
Fe 42,500
Mn 724
SODIUM 76,600
As 270
MW-02
Al 1,150
Mn 304
MW-03
Al 1,180
Fe 1,550
Mn 180
MW-04
Al 1,900
MW-06
NS
PZ-1
NS
PZ-4
Al 1,200
Fe 507
MW-08
Al 1,750
Fe 2,370
Mn 74.1
MW-09
Al 1,250
Cr 3.3
Fe 1,520
Mn 47.9
NOTE 1. ANALYTICAL RESULTS INDICATE THAT VOC's WERE NON-DEFECT IN WELLS MW-02, MW-03, MW-07, MW-08 MW-09, AND PZ-4.
2 CONCENTRATIONS ABOVE NJDEP GROUNDWATER QUALITY CRITERIA ARE REPORTED ON THE FIGURE.
3 CONCENTRATIONS ARE IN ug/L.
LEGEND
MONITORING WELL LOCATION (PVC CASING ELEVATION)
PIEZOMETER LOCATION
PROPOSED MONITORING WELL LOCATION
NS NOT SAMPLED
KLEINFELDER
GROUNDWATER ANALYTICAL RESULTS
JOHNSON & JOHNSON, INC.
MOUNT LAUREL TOWNSHIP, BURLINGTON COUNTY, NEW JERSEY
7/7/05 PROPOSED MONITORING WELLS
1" = 80'
AB
FIGURE 4

500070

ATTACHMENT B

PUBLIC NOTICE

The U.S. Environmental Protection Agency Announces a Proposed Plan and Public Comment Period For the Johnson & Towers Superfund Site Mt. Laurel, New Jersey

The U.S. Environmental Protection Agency (EPA) in cooperation with the New Jersey Department of Environmental Protection (NJDEP) has announced a Proposed Plan detailing the No Further Action alternative recommendation for soil and monitoring and well restriction for groundwater at the Johnson & Towers Superfund Site as well as the rationale for the recommendation.

Before selecting a final remedy, EPA will consider written and oral comments on the No Action alternative. All comments must be received on or before August 30, 2008. EPA's Record of Decision will include a summary of public comments and EPA's responses.

EPA will conduct a public meeting on August 19, 2008 from 7:00 pm to 9:00 pm at the Mount Laurel Township Municipal Courtroom, 100 Mount Laurel Road, Mt. Laurel, NJ 08054. Representatives from the EPA will present the Proposed Plan, the conclusion on the Remedial Investigation Report, explain the reasons for the No Action alternative as well as respond to any questions or comments the public may have with respect to the investigation.

Copies of the Proposed Plan and the Administrative Record are available at the following locations:

Mount Laurel Library
100 Walt Whitman Avenue
Mount Laurel, New Jersey 08054

U.S. EPA Records Center, Region 2
290 Broadway, 18th Floor
New York, New York 10007-1866
212-637-4308
Hours: Monday - Friday - 9:00 am - 5:00 pm
By Appointment Only

Written Comments on the No Action alternative should be sent to:

Grisell Diaz-Cotto
Remedial Project Manager
U.S. EPA, Region 2
290 Broadway, 19th Floor
New York, NY 10007-1866
diaz-cotto.grisell@epa.gov
(212) 637-4430/fax (212) 637-4429

For further information, please contact Wanda Ayala, Community Involvement Coordinator at (212) 637-3676.

ATTACHMENT C

PUBLIC MEETING TRANSCRIPT

U.S. ENVIRONMENTAL PROTECTION AGENCY, REGION II

SUPERFUND PROGRAM PROPOSED PLAN

JOHNSON & TOWERS, INC.,

SOIL AND GROUNDWATER

AUGUST 2008

TRANSCRIPT of public hearing testimony as taken by and before Mary J. Wainwright, a Certified Shorthand Reporter and Notary Public of the State of New Jersey, at the Mount Laurel Municipal Complex, Moorestown-Mount Laurel Road, Mount Laurel, New Jersey, on AUGUST 19, 2008, commencing at 7:05 o'clock in the evening.

A P P E A R A N C E S:

ENVIRONMENTAL PROTECTION AGENCY

BY: MELISSA DIMAS, ESQ., Community Involvement Coordinator

290 Broadway

New York, New York 10007-1866

212-637-3677

dimas.melissa@epa.gov

A L S O P R E S E N T:

John Prince, Chief, Central Jersey Remediation Section

Grisell V. Draz-Cotto, Remedial Project Manager, EPA

Michael Sivak, Risk Assessor, EPA

INDEX

EXHIBITS

Number	Description	Page

(NO EXHIBITS WERE MARKED.)

MS. DIMAS: Good evening, everyone. My name is Melissa Dimas. I am the Community Involvement Coordinator for Region II. I am here with my colleagues; Michael Sivak, John Prince, and Grisell V. Draz-Cotto. They will be able to introduce themselves a little later. I want to thank you for being here tonight.

I would like to take a minute to explain to you what community involvement is. In a nutshell, it is bringing the community, all of you, into the decision-making process for the Superfund Program.

We are here tonight to go over the proposed plan -- to go over the details of the no further action alternative recommendation for addressing soil and groundwater contamination at the Johnson & Towers site, and to discuss our rationale for this recommendation.

The public comment period for the proposed plan started on July 30th, 2008 and will conclude August 29th, 2008. We are required to receive public comments and all comments will be duly noted by Mary Wainwright our stenographer who is here to record this session, or if you prefer to

send them by e-mail you can. In the back of the proposed plan, there is an e-mail address. But when you are giving your comments, if you could please state your name and address. Once the preferred response action has been chosen, a record of the decision will be submitted. John Prince and Grisell V. Draz-Cotto of the Superfund Program will explain that in more detail.

If you could, hold your questions and comments until the end, and then we will have a period for Q and A. Federal regulations require that we have a transcript of the meeting.

At this time, I would like to turn it over to John Prince.

MR. PRINCE: Thank you, Melissa. Good evening. I am with the Superfund Program. I am a manager in that program and have worked on Superfund sites in New Jersey for 20 years.

Grisell is one of the project managers in my group. I have a few remarks about the Superfund Program, the big picture, and then Grisell will get into some details on this particular project, and then we will listen to questions or comments or anything about the site,

and that is one of the reasons why Michael Sivack is here.

Some of the questions that might be asked could be about the risk that might have been imposed by this site or in general imposed by some Superfund sites. That is his area or specialty.

A little bit about the Superfund Program. The United States Congress formed the Superfund Program in 1980. It was meant to address large uncontrolled releases from usually abandoned sites that are considered of a larger scale than might be handled either at the county or at the state level. There are 1300 Superfund sites on what is called the national priorities list across the country. There are about 130 some in New Jersey.

Superfund is really meant to do two different things; emergency response component so that if there is some immediate action where the state or local municipalities needs assistance or is faced with a problem that is a little greater than their resources can handle, the regional offices of the EPA have resources available to assist, and we do a lot of these sort of emergency

responses. Some of those emergency responses then become problems where there appears to be some residual issues, some problem that is lingering. No more emergencies, but there is a residue that needs to be assessed in a complete way and so this emergency response program and then there is a remedial program. That is the program that Grisell and I work in.

The remedial program really deals with assessing all possible concerns that a site might pose, assuring we understand it, and coming up with permanent solutions for those sites.

If you had an opportunity to read the proposed plan, you will note that the Johnson & Towers site doesn't exactly meet some of those descriptions. It is for those instances not on the national priorities list. It is not one of the 1300 sites I just mentioned. It is not a particularly large problem. It never was.

The State of New Jersey, our sort of sister agency in the state here and in each of the states across the country has a similar program, and this project may have been a better fit actually to be addressed at that level because the

Superfund to deal with larger problems. For a variety of reasons it ended up with us. We are now bringing it through to really the finish up of the process. We are going to talk a little bit about this.

We are going to retain the authority to oversee anything else that might need to happen here.

After Grisell makes her presentation, I think we will be able to make it clearer. When we are in this remedial phase, that again our program it involves several stages. The site has been stabilized. No more emergencies. The EPA does various studies; are there groundwater problems emanating from the site, air or soil problems, or something might be migrating to a stream or something. That study phase is complete here.

At the end of that process we then need to -- we don't tell ourselves everything is done and then go and just make a decision on our own, the way the Superfund was constructed as Melissa described requires us to come and tell the community through a variety of methods on paper

through a proposed plan that is written and available through a public setting, press releases, and that sort of thing. We are going to reach a conclusion, then we are going through a hearing process. Sometimes they are simple. Sometimes they are very complicated. There is lots of concern and many, many comments. I am expecting that this one is going to be relatively simple. After hearing that comment, then we go again, describe it, we make a finding, a record, it is called a record decision, and that is a written document that says this is what is going to happen here. We are going to dig up this soil and clean up this part of the site because this is really a problem. We are going to move this part. In this case, because of some actions that have been taken a number of years ago by the Johnson & Towers company we are actually quite far along.

We are recommending there is no additional actions to be taken here, but the process rolls along anyway. That's where we are. So with that, I am going to turn this over to Grisell Draz-Cotto. She has some remarks that are quite specific that are -- that won't take too

long, then we will have an opportunity to hear from you.

MS. DRAZ-COTTO: Good evening. I am going to start this presentation with a background of the facility and the problems created by past environmental practices that have taken us to where we are today.

Then I'll enumerate the response actions taken throughout the years to determine the source of the contamination and remove as much of it as possible.

Following, I will be discussing the kind of contamination attributable to the site and its impact to soil and groundwater.

Lastly, I will explain the process that EPA used to a decision of no further action for this site.

As you probably know, Johnson & Towers which is located at 2010 Briggs Road, sells and services diesel engines, transmissions and related components. The facility is bounded to the north by Route 38, to the east by Briggs Road and to the south and west by fields and wooded areas. The 7.5 acre-site includes a building for offices

and the shop where engine repair and rebuilding activities occur, in addition to parking lots, driveways and lawns.

Johnson & Towers began remanufacturing and rebuilding diesel engines at this location in 1976. The facility primarily generated waste containing spent solvents, acids, caustics and alcohols. Industrial wastewater containing some of these products was discharged into the shop floor drain system. Initially, the facility eliminated its wastewater by directing it into a series of concrete tanks, one of which was perforated to allow for percolation into the subsurface. In 1978, the wastewater disposal system was modified and expanded so that wastewater was rerouted to an oil/water separator prior to discharge in a shallow leach field of roughly 50 square feet.

The leach field became overloaded in a relatively short period due to the volume of wastewater and shallowness of the water table. Occasionally, an industrial wastewater hauling company was used to alleviate the problem. However, the leach field became inoperable in the

latter part of 1982.

That same year Johnson & Towers discontinued use of many cleaning products that were subsequently found in groundwater and altered the product-handling methods for others, so that it could be connected to the pubic sewer system. In 1983, the company connected its wastewater and sanitary systems to the Mount Laurel sewer system, therefore, the composition of the wastewater entering the shop area floor drain system was also upgraded and carefully controlled.

It was this year, 1983, that marked the beginning of a series of investigations and response actions, ordered by EPA and conducted by their facility.

After connection to the public sewer system, Johnson & Towers abandoned the leach field and removed the concrete tanks. Six hundred tons of soil were removed from the seepage tank area. Clean soil was used as backfill and a 500-gallon fiberglass holding tank was placed in the excavation.

This same year EPA issued an Administrative Order of Consent to investigate the

nature and extent of the contamination caused by the wastewater discharge to the leach field.

In 1985 Johnson & Towers submitted a report which showed contamination of the leach field, in addition to the presence of some contaminants in the groundwater monitoring wells down gradient from the leach field. Because these contaminants were identical to those detected in the leach field, the investigation confirmed groundwater contamination attributable to the facility. Therefore, in December of that year, a second Order of Consent was issued to Johnson & Towers to develop and implement a remedial plan to determine the full extent of other on-site and off-site contamination, and to formulate remedial steps to prevent further migration of hazardous wastes from the facility.

After issuance of the second Order of Consent for the site, Johnson and Towers undertook a series of soil and groundwater investigations to characterize the full extent of the site problems. During the course of these investigations, additional underground tanks and piping were discovered and removed. The last of

these subsequent removal actions was completed in 1995.

Field investigations continued until 1999, when EPA concluded it had enough information to begin a Human Health Risk Assessment for the site.

In 2000 and while preparing the briefings EPA determined that additional data were needed to complete it. EPA then directed Johnson & Towers to collect this data primarily in regard to the residual arsenic contamination found in groundwater at this site. With the collection of additional data EPA completed the Human Health Risk Assessment in 2004.

A last sampling event took place in 2008 to confirm that conditions were either unchanged or improving throughout the whole site.

Finally last March, and after reviewing throughout the years, EPA concluded that these investigations effectively compromised a remedial investigation under Superfund, and that it was satisfied with the completeness of this investigation.

I will now proceed to discuss the

overall results of this long remedial investigation in terms of the contaminants discovered at the site and their impact to groundwater and soil.

The initial problems identified at the site in 1986 were related to volatile organic compounds, found in soils as well as in groundwater samples in the area of the underground storage tank and the leach field.

In 1999, several years after completion of the last removal action, soil sampling results were compared to a set of screening values, which in this case were EPA's Industrial Soil Risk-Based Concentrations. These risk-based concentrations help identify contaminants of potential concern. No VOCs in soils exceeded these RBCs.

In addition, also since 1999, no VOCS have been detected in groundwater at concentrations that exceeded the RBCs or Groundwater Quality Standards.

In regards to arsenic, it is important to note that even though it had not being an original contaminant of concern at the site, beginning in 1988, arsenic was found above

health-based screening values in soils associated with the areas of VOCs contamination, as well as in groundwater.

Arsenic in the environment is present in one of several different chemical forms or species. Determining which species of arsenic is present can sometimes provide clues to its origin. Therefore, the last sampling event in 2008 tested several site groundwater samples in this way.

Arsenic in the environment is present in one of several different chemical forms or species. Determining which species of arsenic is present can sometimes provide clues to its origin. Therefore, the last sampling event in 2008 tested several site groundwater samples in this way.

However, the site-specific data did not help clarify the source of the arsenic. It has been suggested that arsenic present in soils in the area have been influenced by local conditions that make it more soluble, resulting in the localized elevated concentrations in groundwater. In addition, traces of pesticides have been detected

in both groundwater and in soils of the site; these suggest that a previous land use, such as agriculture, can also account for arsenic in soil in the area.

Finally, concentrations of contaminants of concern in groundwater, in this case, aluminum, arsenic, chromium and iron, have gone down or remained constant since the round of data collected in 1999.

With all this information, EPA proceeded with the development of a risk-based approach to identify an alternative for addressing soil and groundwater at the site.

As I mentioned before, and as part of the remedial investigation, EPA conducted a baseline risk assessment to estimate the current and future effects of contaminants on human health. A baseline risk assessment is an analysis of the potential adverse human health of releases of hazardous substances from a site in the absence of any actions or controls to mitigate such releases, under current and future land and groundwater uses.

The site is currently zoned commercial and industrial. The surrounding

properties are primarily commercial in nature. Future land use is expected to remain the same. The baseline risk assessment evaluated health effects that could result from exposure to contaminated groundwater and soil by current and future site workers and trespassers, as well as hypothetical future construction workers. Hypothetical ingestion of groundwater by off-site residents (adult and child) was also evaluated.

In regards to soil, the Human Health Risk Assessment concluded that the cancer risks and non-cancer health hazards from constituents detected in the soil were within EPA's target risk range for carcinogens and below the Hazard Index for non-carcinogens for all populations evaluated under both current and future use scenarios.

In the evaluation of groundwater, however, cancer risks and non-cancer health hazards from exposure to some metals exceeded EPA thresholds from hypothetical future use of groundwater as a drinking water source. In this category, arsenic is the primary contaminant of concern.

Nonetheless, even with these

exceedences of EPA's risk range for groundwater, several years of monitoring data show that the groundwater contamination is localized and does not appear to be migrating down-gradient.

Additionally, all nearby businesses are served by public water. Therefore, no remedial action for groundwater is warranted.

However, because levels of arsenic persist in two wells, a regular monitoring plan would be established while the contamination exist.

In addition, a Classification Exception Area restriction would ensure that wells are not installed in the future so long as groundwater concentrations continue to exceed State standards. Lastly, based on the data collected and reported from 1984 to 2007 and the conclusion of the Human Health Risk Assessment no further remedial action is necessary for soil.

In essence, this has been the rationale for EPA's preferred alternative for addressing soil and groundwater at the Johnson & Towers site.

MS. DIMAS: Does anyone have questions.

MR. STEVE HASSETT: Steve Hassett, 345 Walton Avenue, Mount Laurel, New Jersey. Their property is 7.5 acres. We live about a mile from the site. We have a well on the property that we don't use for drinking. We've been in the house for about 5 years. We never had the well tested.

Was any of the ground outside of that area ever tested or just that site?

MR. PRINCE: We did collect some samples right around the facility and found that the problems that existed from their operations really were localized. We were very easily bound them and show with regard to the soil it was an area where contamination -- where it been discharged.

With regard to the groundwater that we have today, we have these two wells that are closest to where that area originally was that had this persistent arsenic problem, we have an area that goes around all the way out to the limits of that land.

The other thing that we should probably mention is that this is all very shallow. It is almost the shallowest of the soil and the

shallowest of the groundwater. Our wells are relatively shallow to the point where -- your distance away that it couldn't be affected. I am not sure how productive the well -- that shallow would even be. You would need a much larger --

MR. HASSETT: Where had they removed the 600 tons of soil or whatever that was, didn't that go down below that level and the arsenic reappeared?

MR. PRINCE: We don't know where the arsenic --

MS. HALBE: There is arsenic in soils here.

MR. PRINCE: -- the combination of groundwater contaminants that had been released and some local conditions meant that it made the arsenic in the soil in many places maybe a little more soluble because Johnson & Towers did not dump any there.

The conditions that made it soluble there may have meant that it had a hard time migrating away from the groundwater. That sort of environment goes back into not being dissolved anymore.

In our experience, there does not seem to be a mode for it to get away from the site. Six hundred tons may sound like a lot, but you would be surprised how small of an area it is.

MR. HASSETT: The DOT has plans of building Route 295 and Route 38 interchange that includes an overpass at Briggs Road. I don't know if you talked about that the project and if that is going to create any problems?

MR. PRINCE: It should not have any problem. The only thing that we have to do for this particular project is there are two wells that have these elevated levels. We expect at some point it will dissipate, but until it does we are going to keep monitoring it.

MS. HALBE: Pat Halbe, Municipal Clerk, but I am also Deputy Emergency Management Coordinator.

First, I would like to comment because I am was on the Planning Board and I do know that area, and I do know that there was a lot of arsenic that they had to remove.

We require in our town that soils be examined before -- when they are building, and they

did have to remove a large amount of occurring arsenic not far from there.

My other comment is though, as Emergency Management person, is there anything that the Emergency Management people in town need to know if there is an incident at that location, I know years ago we received some information, but it was more in the class of what we get from the DEP every time there is a spill and it was not classified.

When you hear Superfund, there is a red flag that goes up. Is there any additional precautions that need to be taken for anything?

MR. PRINCE: No.

MS. HALBE: Is there any danger to wildlife in the area for groundwater contamination.

MR. PRINCE: I don't believe that there is any groundwater, surface water interface that we have found. The groundwater does go to the surface water, but in this case it does not actually make it all the way. It does not make it more than 50 feet from where it originally disbursed.

MS. HALBE: It will continue to be

monitored?

MR. PRINCE: We will require that Johnson and Towers keep monitoring. They have the continuing responsibility to report that to us in using our sampling requirements at our instructions on how to do it, and there are no other emergency matters that would come to life from what is left there.

MS. DIMAS: Any other questions or comments? We are all clear on the plan of action or no action? Thank you for coming tonight. I appreciate your time. Again, if you have any further comments, feel free to e-mail Grisell. We will definitely take that into account.

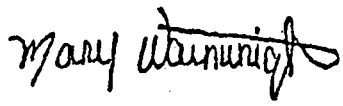
(Hearing concluded at 8:05 p.m.)

C E R T I F I C A T E

I, Mary Jane Wainwright, a Certified Shorthand Reporter and Notary Public of the State of New Jersey, do hereby certify that prior to the commencement of the examination, the witness and/or witnesses were sworn by me to testify to the truth and nothing but the truth.

I do further certify that the foregoing is a true and accurate computer-aided transcript of the testimony as taken stenographically by and before me at the time, place and on the date hereinbefore set forth.

I do further certify that I am neither of counsel nor attorney for any party in this action and that I am not interested in the event nor outcome of this litigation.



Certified Shorthand Reporter
Notary Public of New Jersey
My commission expires 07-08-09

Dated: AUGUST 19, 2008